TOSHIBA

SERVICE MANUAL

COLOUR TELEVISION

53S23F2

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SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

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GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size	21 inch / 544.5mmV
			CRT Type	NORMAL
			Deflection	90 degree
			Magnetic Field BV/BH	+0.45G/0.18G
		Color System		PAL/SECAM
		Speaker		2 Speaker
			Position	Front
			Size	2.0 x4.7 Inch
			Impedance	8 ohm
		Sound Output	MAX	5.0+5.0 W
			10%(Typical)	4.0+4.0 W
		DDR SECAM		Yes
		NTSC3.58(AV)+NTSC4.43		Yes
		PAL60Hz		Yes
G-2	**Tuning System**	Broadcasting System		FRANCE+CCIR System B/G L D/K
		Tuner and	System	1Tuner
		Receive CH	Destination	Hyper
			Tuning System	F-Synth
			Input Impedance	VHF/UHF 75 ohm
			CH Coverage	E2 - E4, X - Z+2, S1 - S10, E5 - E12, S11 - S41, E21 - E69
		Intermediate Frequency		PAL/SECAM(U&VH)/SECAM(VL)
			Picture(FP)	38.9/38.9/34.4MHz
			Sound(FS)	33.4/32.4/40.9MHz
			FP-FS	5.5/6.5/6.5MHZ
				PAL DK,SECAM DK
			Picture(FP)	38.9 , 38.9 MHz
			Sound(FS)	32.4 , 32.4 MHz
			FP-FS	6.5 , 6.5MHz
		Preset CH		100
		Stereo/Dual TV Sound		Nicam, G-ST
		Tuner Sound Muting		Yes
G-3	**Power**	Power Source	AC	230V-240V AC 50Hz
			DC	
		Power Consumption	at AC	
				60 W at AC 230 V 50 Hz
			Stand by (at AC)	3 W at AC 230 V 50 Hz
			Per Year	-- kWh/Year
		Protector	Power Fuse	Yes
G-4	**Regulation**		Safety	CE(EN60065:98)
			Radiation	CE
			X-Radiation	-
G-5	**Temperature**		Operation	+5oC ~ +40oC
			Storage	-20oC ~ +60oC
G-6	**Operating Humidity**			Less than 80% RH

GENERAL SPECIFICATIONS

G-7	**On Screen Display**	Menu		Yes	
		Menu Type		Character	
		Picture		Yes	
			Contrast	Yes	
			Brightness	Yes	
			Colour	Yes	
			Tint (NTSC Only)	Yes	
			Sharpness	Yes	
		Audio		Yes	
			Bass	Yes	
			Treble	Yes	
			Balance	Yes	
			BBE On/Off		No
			Stable Sound On/Off		No
		CH Tuning		Yes	
			Manual	Yes	
			ITS	Yes	
			CH MAPPING	Yes	
			CH Allocation		No
			Text Langage(East/West)	Yes	
		Language		Yes	
		Clock Set			No
		On/OffTimer Set		Yes	
		On Timer Set			No
		Pin Code Registration			No
		Panel Lock		Yes	
		Nicam Auto Off		Yes	
		AV Colour System		Yes	
		Sound System			No
		Auto 4:3 Default			No
		AV2 Output		Yes	
			Output Source	Yes	
			Source	Yes	
		Control Level		Yes	
			Volume	Yes	
			Brightness	Yes	
			Contrast	Yes	
			Colour	Yes	
			Tint (NTSC Only)	Yes	
			Sharpness	Yes	
			Tuning	Yes	
			Bass	Yes	
			Treble	Yes	
			Balance	Yes	
			Back Light		No
		Nicam ST		Yes	
		G(A2)Stereo		Yes	
		Tone 1/2 (A/B)		Yes	
		Surround On/Off			No
		Pin Code			No
		AV		Yes	
		Skip		Yes	
		Channel		Yes	
		Broadcasting Station Name		Yes	
		Hotel Lock			No
		Sleep Timer			No
		Selectable Picture		Yes	
		Wide Mode			No
		Sound Mute		Yes	
G-8	**OSD Language**			English , French , Spanish Germany , Italian Polski , Turkey , Sweden Netherland , Portgal Norway , Finland , Denmark Czech , Slovak , Hungarian Russian , Greek Yugoslavian , Bulgarian , Romanian Slovenian , Croatian	
G-9	**Clock and Timer**	Sleep Timer	Max Time	- Min	
			Step	- Min	
		Clock			No
		On Timer	Program(On Timer)	Yes	
		Off Timer	Program(Off Timer)	Yes	
		Wake Up Timer			No
		Timer Back-up (at Power Off Mode)	more than	-- Min	Sec

GENERAL SPECIFICATIONS

G-10	**Remote Control**	Unit		RC-GX
		Glow in Dark Remocon		No
		Format		NEC
		Custom Code		40-BF h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		34 Keys
		Keys	Power	Yes
			1/Rename	Yes
			2/Move	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Volume Up / +	Yes
			Volume Down / -	Yes
			Previous	Yes
			Select Picture	Yes
			Menu	Yes
			OK(Enter)	Yes
			EXIT	Yes
			Audio Select	Yes
			On/OffTimer	No
			Mute	Yes
			DSP/surround/Virtual Dolby	No
			Woofer/Bass	No
			Picture Size	No
		T'TEXT Keys	TEXT / MIX / TV	Yes
			CH Up / Page Up	Yes
			CH Down / Page Down	Yes
			Red	Yes
			Green	Yes
			Yellow	Yes
			Cyan	Yes
			TEXT F/T/B	Yes
			Reveal	Yes
			TIMED PAGE(SUB PAGE)	Yes
			CALL / TEXT INDEX	Yes
			INPUT SELECT	Yes
			TEXT HOLD	Yes
			TIME / TXCL	Yes

GENERAL SPECIFICATIONS

G-11	**Features**	Auto Degauss		Yes
		Auto Shut Off		Yes
		Canal+		No
		CATV		No
		Anti-theft(Back Up 30 Min.)		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		BBE		No
		Auto Search		No
		ITS		Yes
		CH Allocation		No
		CH MAPPING		Yes
		Just Clock Function		No
		Game Position		No
		CH Label		No
		VM Circuit		No
		Full OSD		No
		Noise Blue Back		Yes
		T'Text		Yes
			Text type	Fastext
			Text Language	English , French, Swedish, Hungarian Finnish, Turkish, German, Dutch Portuguese, Spanish, Italian, Greek Polish, Russian, Bulgarian, Czech Slovak, Romanian, Slovenian Croatian, Yugoslavian
		Premiere		No
		Comb Filter		No Lines
		Auto CH Memory		No
		Stable Sound		No
		Auto Set Up		No
		FBT Leak Test Protect		Yes
		Previous (Quick View)		Yes
		Panel Lock		Yes
		Power ON Memory		Yes
		Double Focus & Dynamic Focus		No
		Wss Signal Wide Change		No
		Virtual Dolby Surround		No
		Hotel Lock		No
G-12	**Accessories**	Owner's Manual	Language	French
			w/Guarantee Card	No
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	-
			Terminal	-
		Loop Antenna		No
			Terminal	-
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Facility List		No
		Important Safeguard		Yes (Owner's Manual In)
		Dew/AHC Caution Sheet		No
		AC Plug Adapter		No
		Quick Set-up Sheet		Yes
		Battery		Yes
			UM size x pcs	UM-4 x 2 pcs
			OEM Brand	No
		AC Cord		No
		AV Cord (2Pin-1Pin)		No
		Registration Card		Yes
		PTB Sheet		No
		300 ohm to 75 ohm Antenna Adapter		No

GENERAL SPECIFICATIONS

G-13	**Interface**	Switch	Front	Power (Tact Sw)	No
				System Select	No
				Main Power SW	Yes
				Sub Power	No
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
			Rear	AC/DC	No
				TV/CATV Selector	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	No
				Stand-by	No
				Stand-by/ON	Yes(Red)
				On Timer	Yes(Green)
		Terminals	Front	Video Input	RCA
				Audio Input	RCA x 2(Stereo)
				Other Terminal	HeadPhone (Stereo)
			Rear	Video Input(Rear1)	No
				Video Input(Rear2)	No
				Audio Input(Rear1)	No
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	No
				Euro Scart(21Pin)	Yes (x1)
				S-INPUT	Yes (x1)
				Euro Scart(21Pin)	Yes (x1)
				RGB-INPUT	Yes (x1)
				Component Input	No
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	D Type
				AC Outlet	No
G-14	**Set Size**			Approx. W x D x H (mm)	590 x 492 x 446.5
G-15	**Weight**			Net (Approx.)	21.0 kg (--- lbs)
				Gross (Approx.)	23.8kg (---lbs)
G-16	**Carton**		Master Carton		No
				Content	--- Sets
				Material	--- / ---
				Dimensions W x D x H(mm)	---
				Description of Origin	---
			Gift Box		Yes
				Material	Double/Brown
				Dimensions W x D x H(mm)	658 x 575 x 529
				Design	As per Buyer's
				Description of Origin	No (Assembled in U.K.)
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	46
			Container Stuffing		288 Sets/40' container
G-17	**Material**		Cabinet	Front	PS 94HB
				Rear	PS 94HB
				Holder	PS 94V0 NON-Decabrom
			PCB	Non-Halogen Demand	Yes
				Eyelet Demand	Yes
G-18	**Environment**		Pb Free	Lead-free Solder	No
				Other	No
			Cd Free		No

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 1-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

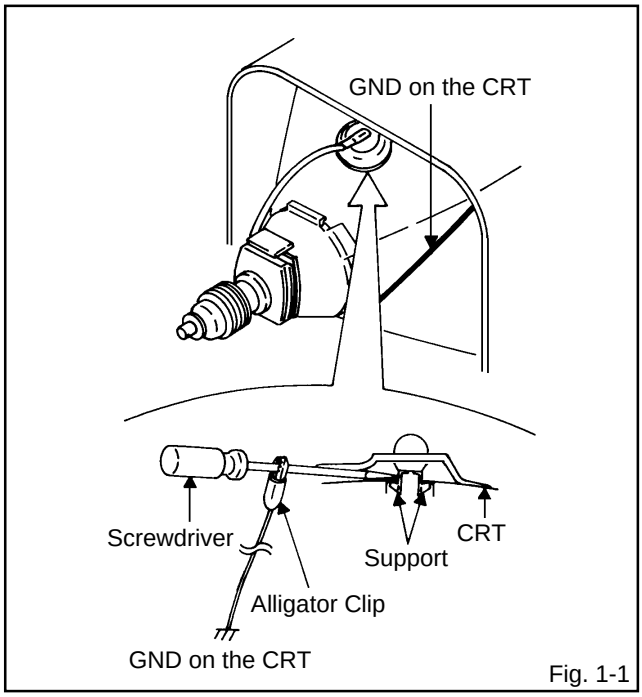


Fig. 1-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 1-2.)**

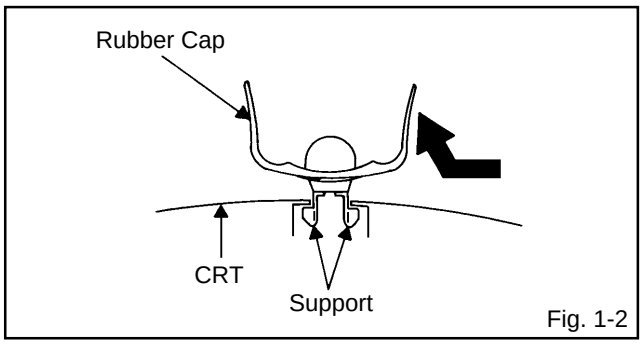


Fig. 1-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 1-3.)**

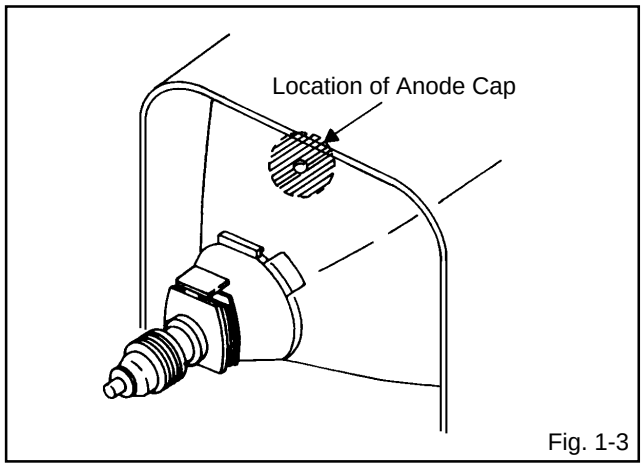


Fig. 1-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 1-4.)**

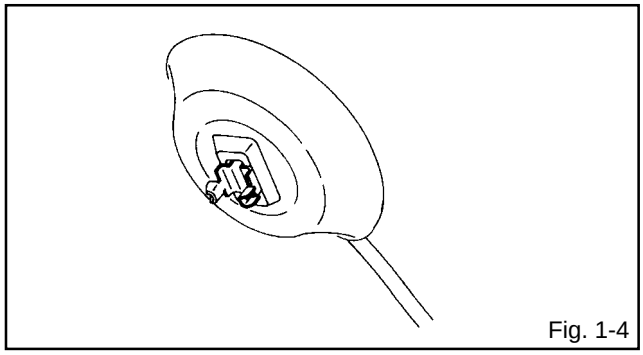


Fig. 1-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 1-5**.

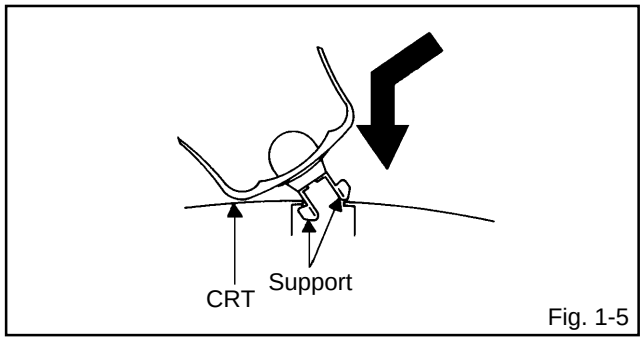


Fig. 1-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 2-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

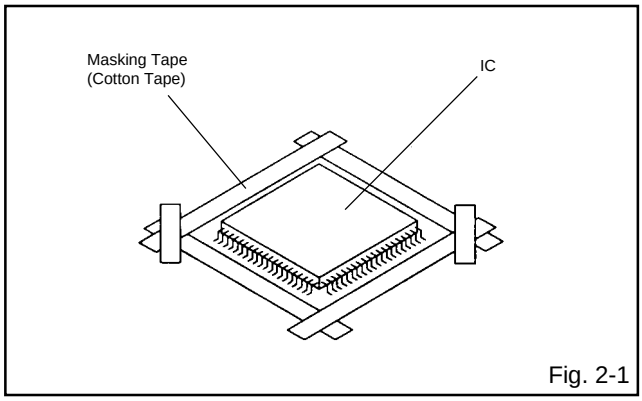


Fig. 2-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 2-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

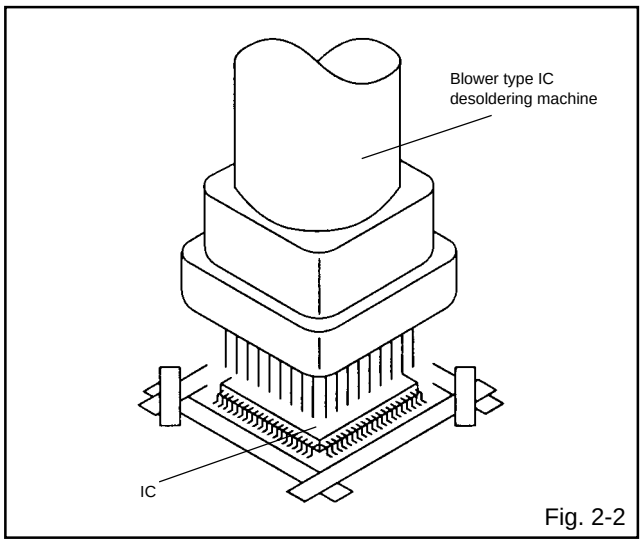


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 2-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

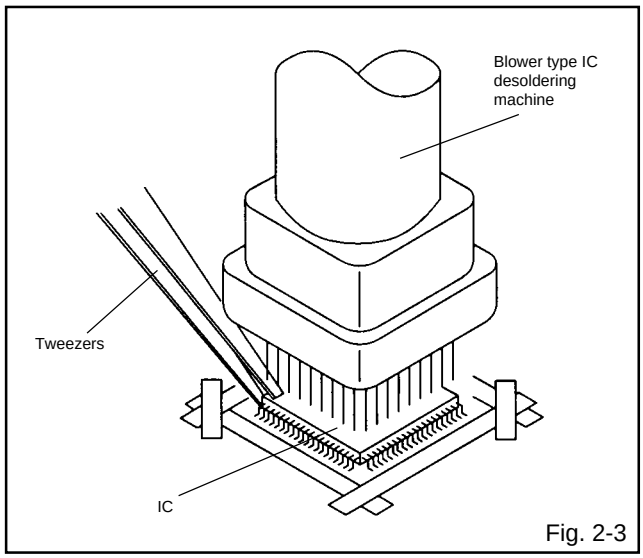


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

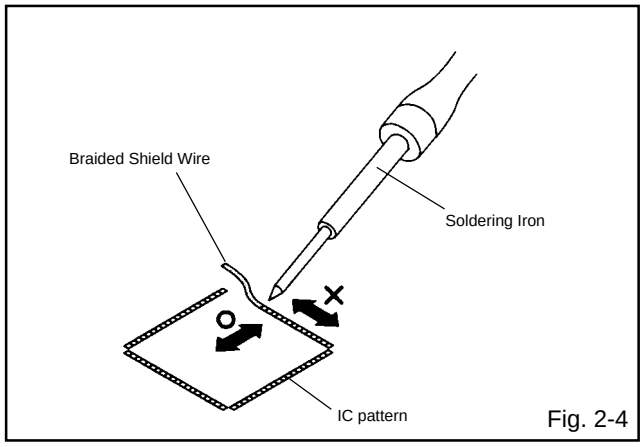


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 2-5.)**

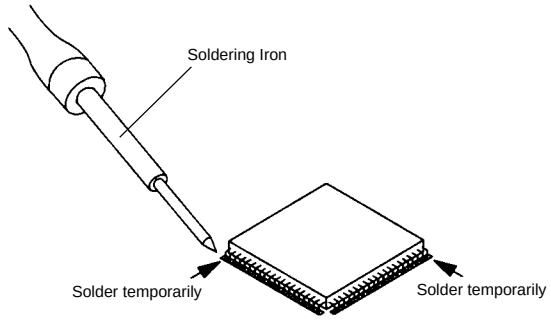


Fig. 2-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 2-6.)**

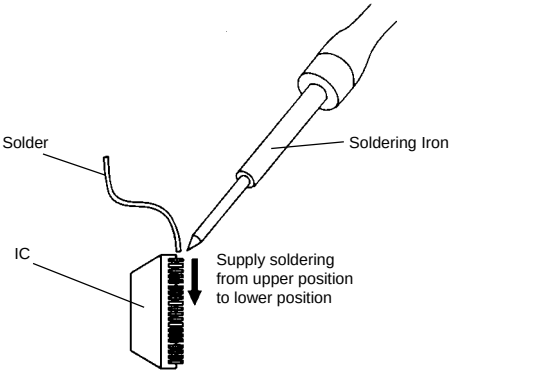


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   NOTE

   Do not absorb the solder to excess.

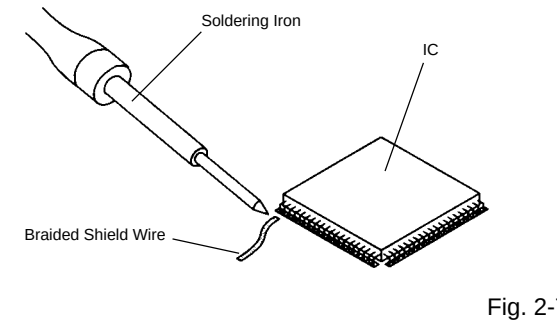


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

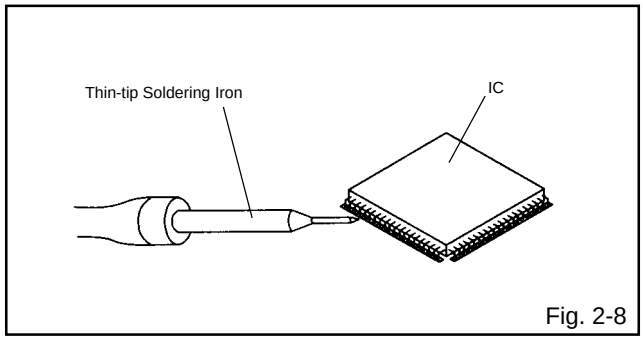


Fig. 2-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 2 seconds.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Reset the user setting items (PICTURE, VOLUME and LANGUAGE) to the initial state for delivery.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
3. After the confirmation of using hours, turn off the power.

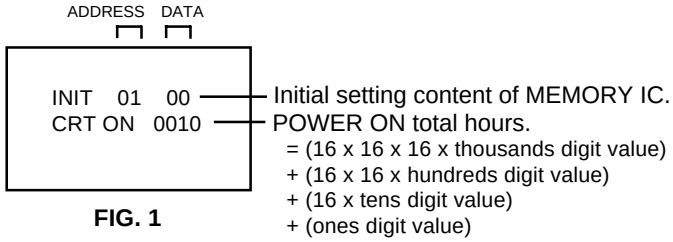

ADDRESS
DATA
INIT 01 00
CRT ON 0010
Initial setting content of MEMORY IC.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need setting for after INI 16 due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	---	00	38	23	18	F1	90	62	6E	5E	F3	07	03	00	06	73
10	10	00	98	98	98	3C	C0	---	---	---	---	---	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the VOL. +/- button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press OK to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. +/- button until required DATA value has been selected.
6. Pressing OK will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

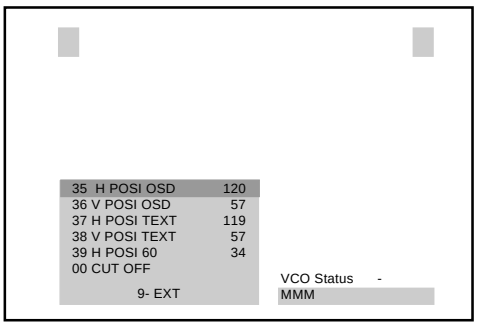


Fig. 1-1

2. Use the Channel button **(0-9)** or Channel UP/DOWN button on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	CUT OFF	20	TINT
01	RF AGC	21	SHARP
02	AGC GAIN	22	CONTRAST CENT
03	R DRIVE	23	CONTRAST MAX
04	R CUTOFF	24	CONTRAST MIN
05	G DRIVE	25	COLOR CENT
06	G CUTOFF	26	COLOR MAX
07	B DRIVE	27	COLOR MIN
08	H POSI (50)	28	M R CUT OFF
09	V POSI (50)	29	M G CUT OFF
10	V POSI (60)	30	M B CUT OFF
11	V SIZE (50)	31	CVBS OUT
12	V SIZE (60)	32	APR THRESHOLD
13	VCO COARSE	33	BELL FILTER
14	VCO FINE	34	BANDPASS
15	VCO COARSE L1	35	H POSI OSD
16	VCO FINE L1	36	V POSI OSD
17	BRIGHT CENT	37	H POSI TEXT
18	BRIGHT MAX	38	V POSI TEXT
19	BRIGHT MIN	39	H POSI (60)

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Place the set with Aging Test for more than 15 minutes.
2. Connect the digital voltmeter to **TP501**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR501** until the DC voltage is 117 ± 1V.

2-2: VCO

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the oscillator (38.9MHz) to **TP001**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "VCO COARSE".
4. Press the VOL. +/- button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "+" side on the changed from "+" to "-".
5. Press the Page UP button once to set to "VCO FINE" mode.
6. Press the VOL. +/- button on the remote control to select the 4 step down point from the upper limit on the "OK".
   (Example: In case of the "OK" range 30~41, select 37.)

2-3: VCO COASE L1, VCO FINE L1

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the oscillator (33.95MHz) to **TP001**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(15)** on the remote control to select "VCO COARSE L1".
4. Press the VOL. +/- button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "+" side on the changed from "-" to "+".
5. Press the Page UP button once to set to "VCO FINE L1" mode.
6. Press the VOL. +/- button on the remote control to select the 5 step down point from the upper limit on the "OK".
   (Example: In case of the "OK" point 30~41, select 36.)

2-4: AGC VOLTAGE

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the UHF (63 ± 1dB).
3. Connect the digital voltmeter to **pin 5 of CP101**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "RF AGC".
5. Press the VOL. +/- button on the remote control until the digital voltmeter is 2.4 ± 0.05V.

2-5: CUT OFF

1. Set condition is AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

ELECTRICAL ADJUSTMENTS

2-6: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 10 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE".
5. Press the Page UP/DOWN button on the remote control to select the "R DRIVE", "G DRIVE", "M R CUTOFF" or "M G CUTOFF".
6. Adjust the VOL. +/- button on the remote control to whiten the R DRIVE, G DRIVE, M R CUT OFF, and M G CUT OFF at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-7: FOCUS

1. Receive a 70dB monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-8: HORIZONTAL POSITION

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "H POSI (50)".
4. Press the VOL. +/- button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.
5. Receive the monoscope pattern of NTSC. (Audio Video Input)
6. Using the remote control, set the brightness and contrast to normal position.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(39)** on the remote control to select "H POSI (60)".
8. Press the VOL. +/- button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-9: VERTICAL SIZE

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(11)** on the remote control to select "V SIZE (50)".
4. Adjust by using the VOL. +/- button on the remote control so that the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.
6. Receive the monoscope pattern of NTSC. (Audio Video Input)
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "V SIZE (60)".
9. Adjust by using the VOL. +/- button on the remote control so that the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.

2-10: VERTICAL POSITION/VERTICAL LINEARITY

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask.
4. Adjust the **VR420** until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-11: BRIGHT CENT

1. Receive the PAL black pattern*. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRIGHT CENT".
5. Press the VOL. +/- button on the remote control until the screen begin to shine.
6 Receive the PAL black pattern*. (Audio Video Input)
7. Set to the AV mode. Then perform the above adjustments 2~5.

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

2-12: CONTRAST CENT

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "CONTRAST CENT".
2. Press the VOL. +/- button on the remote control until the contrast step No. becomes "40".
3. Receive a broadcast and check if the picture is normal.
4. Set to the AV mode. Then perform the above adjustments 1~3.

ELECTRICAL ADJUSTMENTS

2-13: COLOR CENT

1. Receive the PAL color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast and color to normal position.
3. Connect the oscilloscope to **TP022**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(25)** on the remote control to select "COLOR CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 5 scales on the screen of the oscilloscope.
6. Press the VOL. +/- button on the remote control until the red color level is adjusted to 85 ± 10% of the white level. **(Refer to Fig. 2-1)**
7. Receive the PAL color bar pattern. (Audio Video Input)
8. Set to the AV mode. Then perform the above adjustments 2~6.

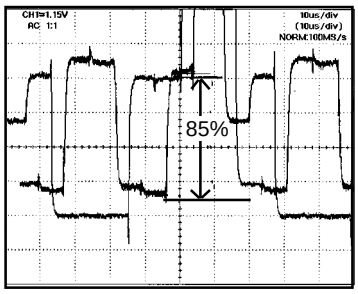


Fig. 2-1

2-14: TINT

1. Receive the NTSC color bar pattern. (Audio Video Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the oscilloscope to **TP024**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "TINT".
5. Press the VOL. +/- button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**

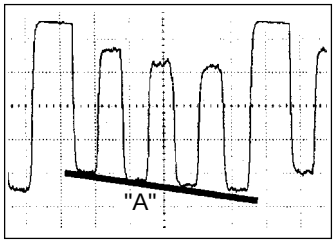


Fig. 2-2

2-15: OSD HORIZONTAL

1. Using the remote control, set the brightness and contrast to normal position.
2. Activate the adjustment mode display of **Fig. 1-1**.
3. Press the VOL. +/- button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-3)**

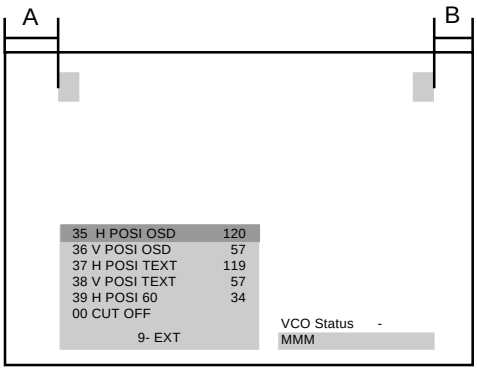


Fig. 2-3

2-16: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF	AV
02	AGC GAIN	00	---
04	R CUTOFF	00	---
06	G CUTOFF	00	---
07	B DRIVE	45	---
09	V POSI (50)	08	---
10	V POSI (60)	00	---
18	BRIGHT MAX	35	35
19	BRIGHT MIN	09	09
20	TINT	30	ADJ.
21	SHARP	03	03
23	CONTRAST MAX	50	50
24	CONTRAST MIN	10	10
26	COLOR MAX	50	50
27	COLOR MIN	10	10
30	M B CUT OFF	127	---
31	CVBS OUT	31	---
32	APR THRESHOLD	00	---
33	BELL FILTER	00	---
34	BANDPASS	00	---
36	V POSI OSD	57	---
37	H POSI TEXT	115	---
38	V POSI TEXT	57	---

*To check for the fixed values of the RF (60Hz), indicate the adjustment mode screen while input the 60Hz video signal.

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

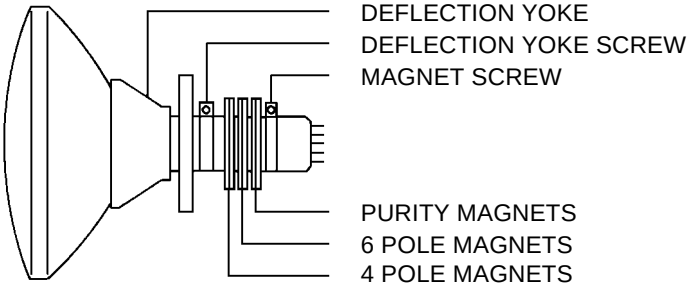


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

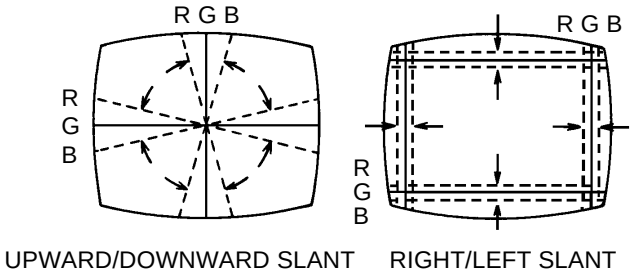


Fig. 3-2-a

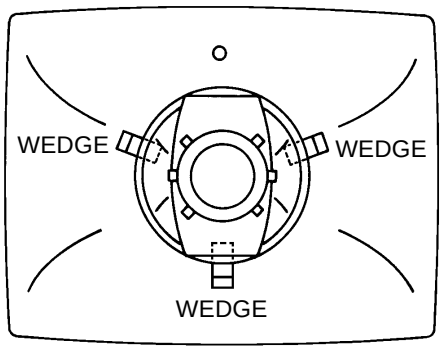
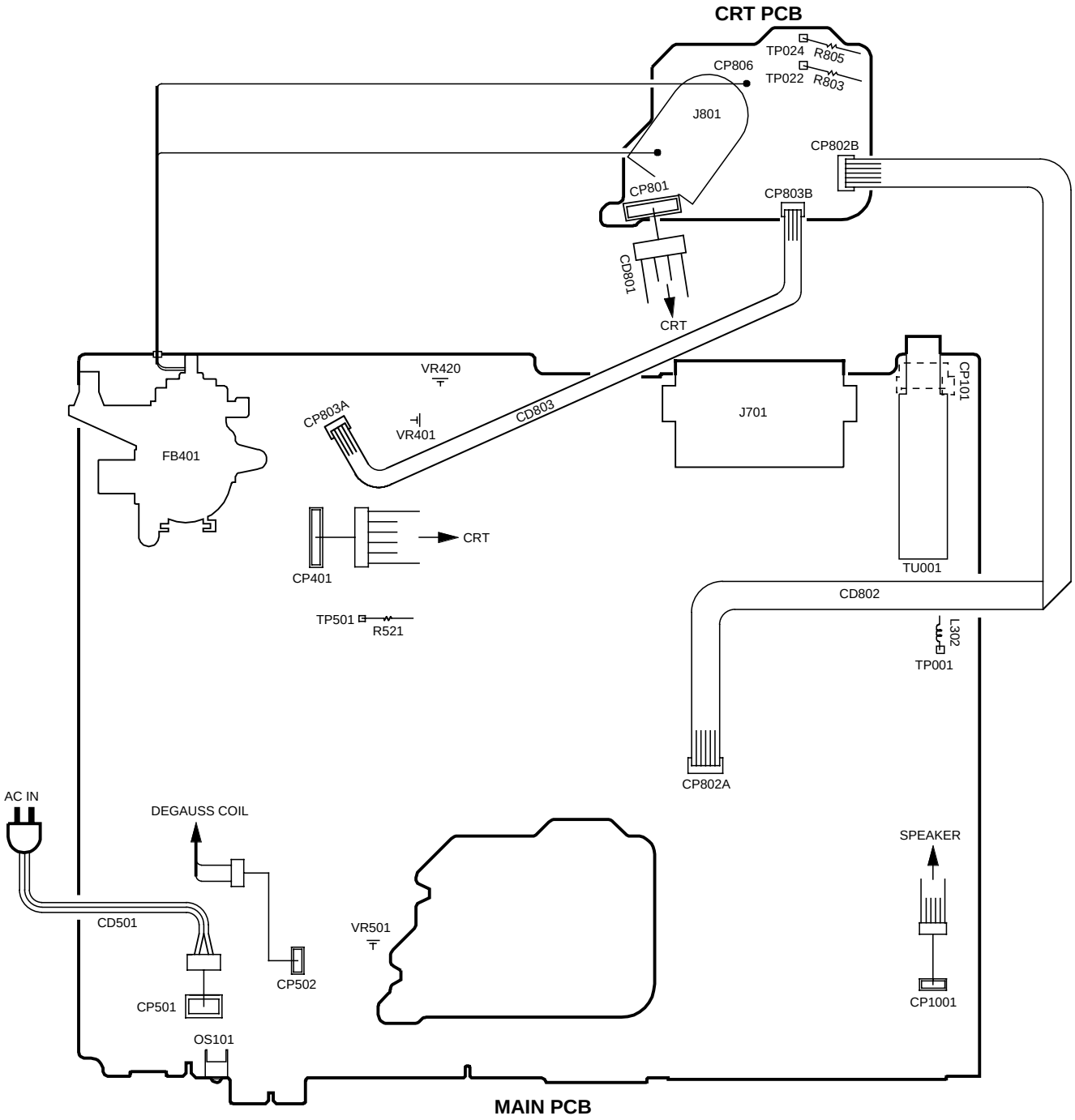


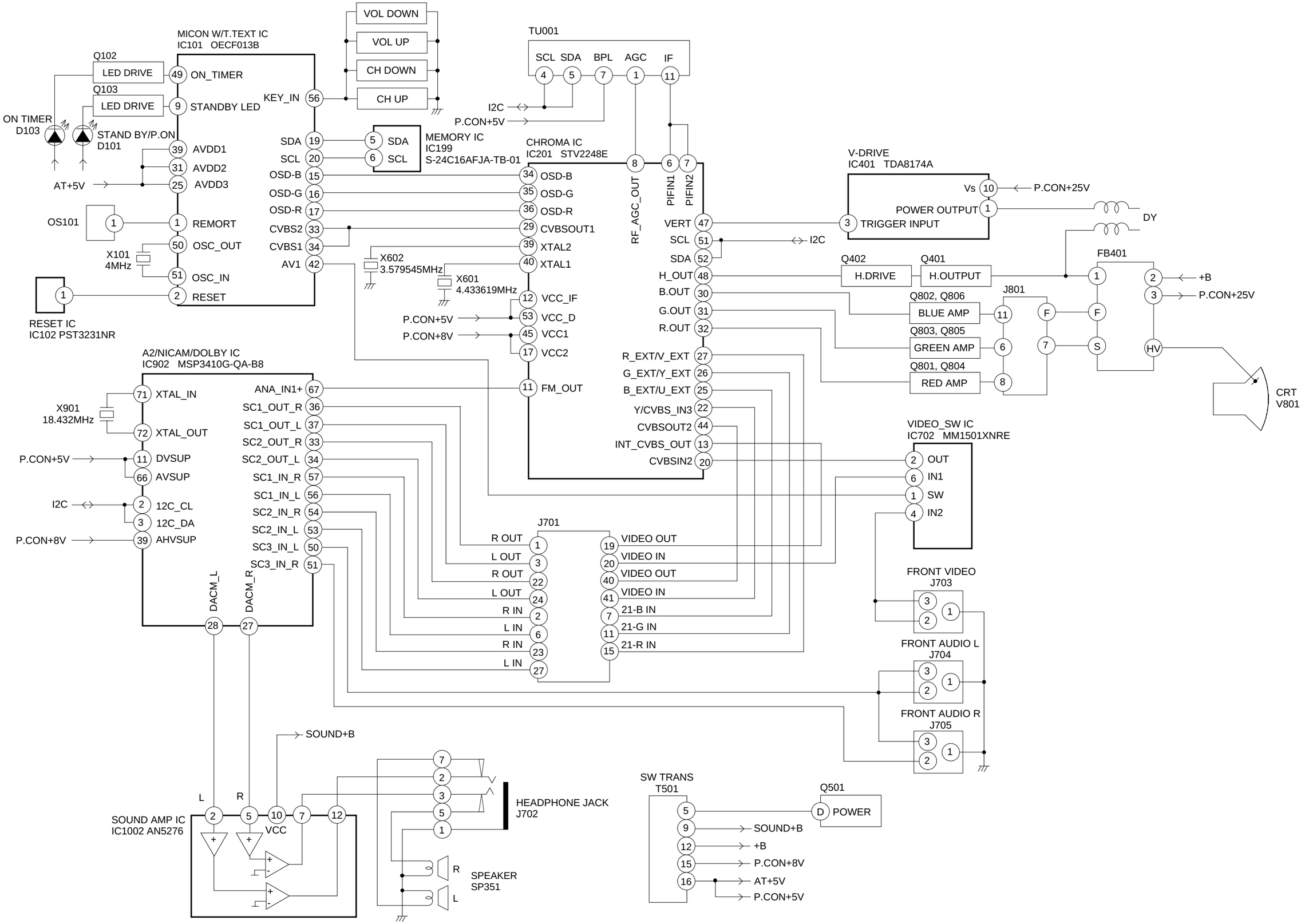
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

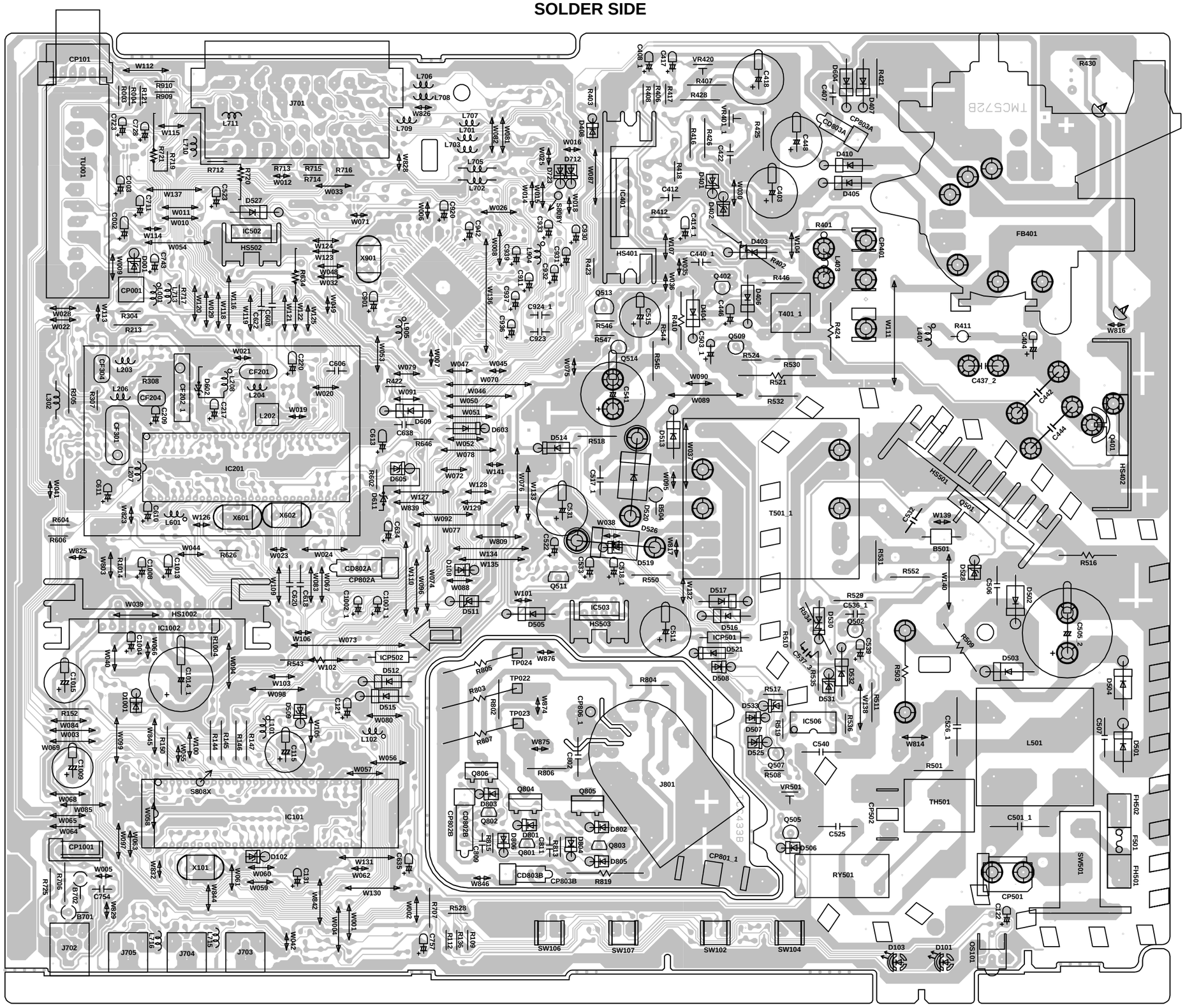
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



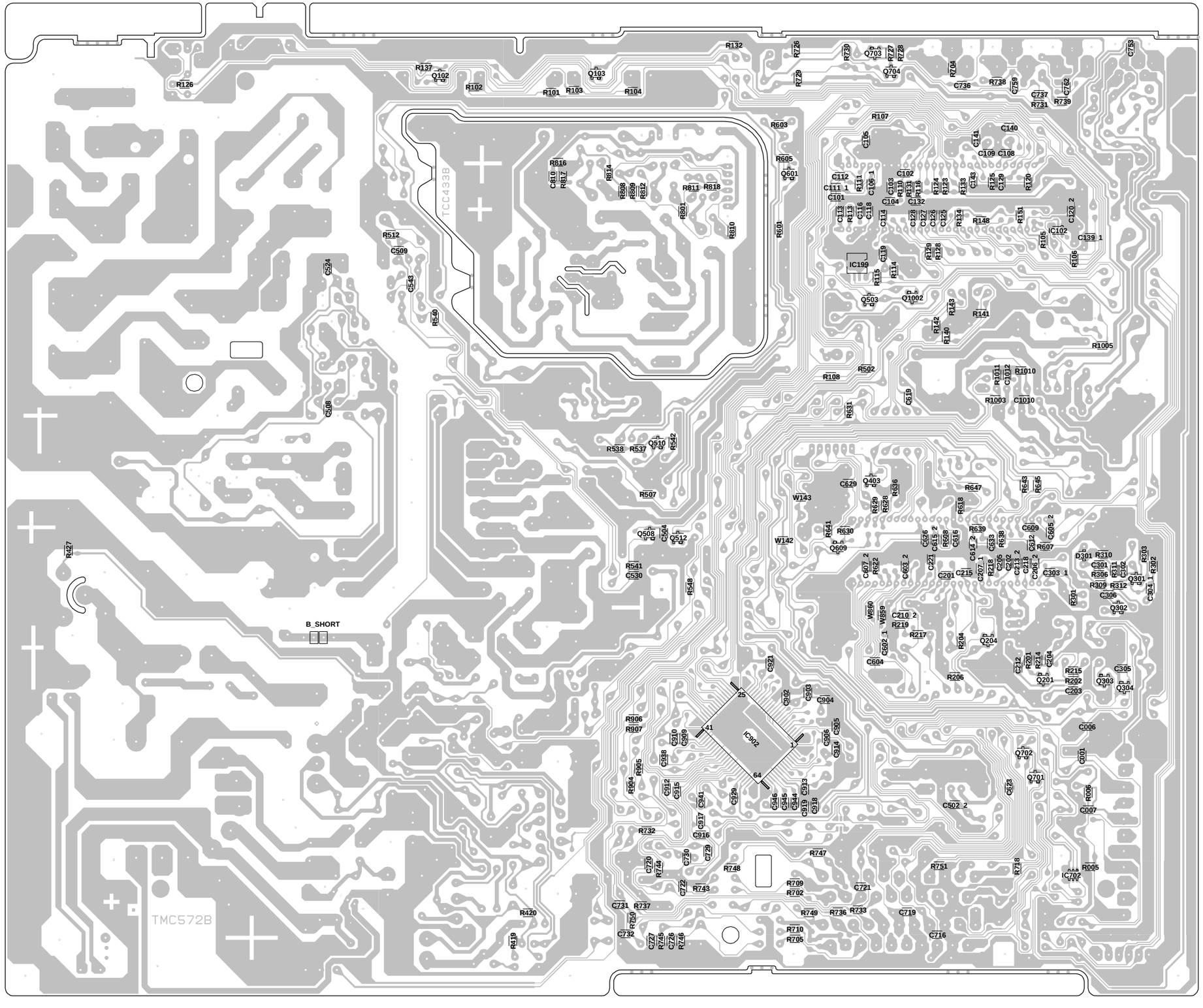
BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
MAIN/CRT (INSERTED PARTS)
SOLDER SIDE

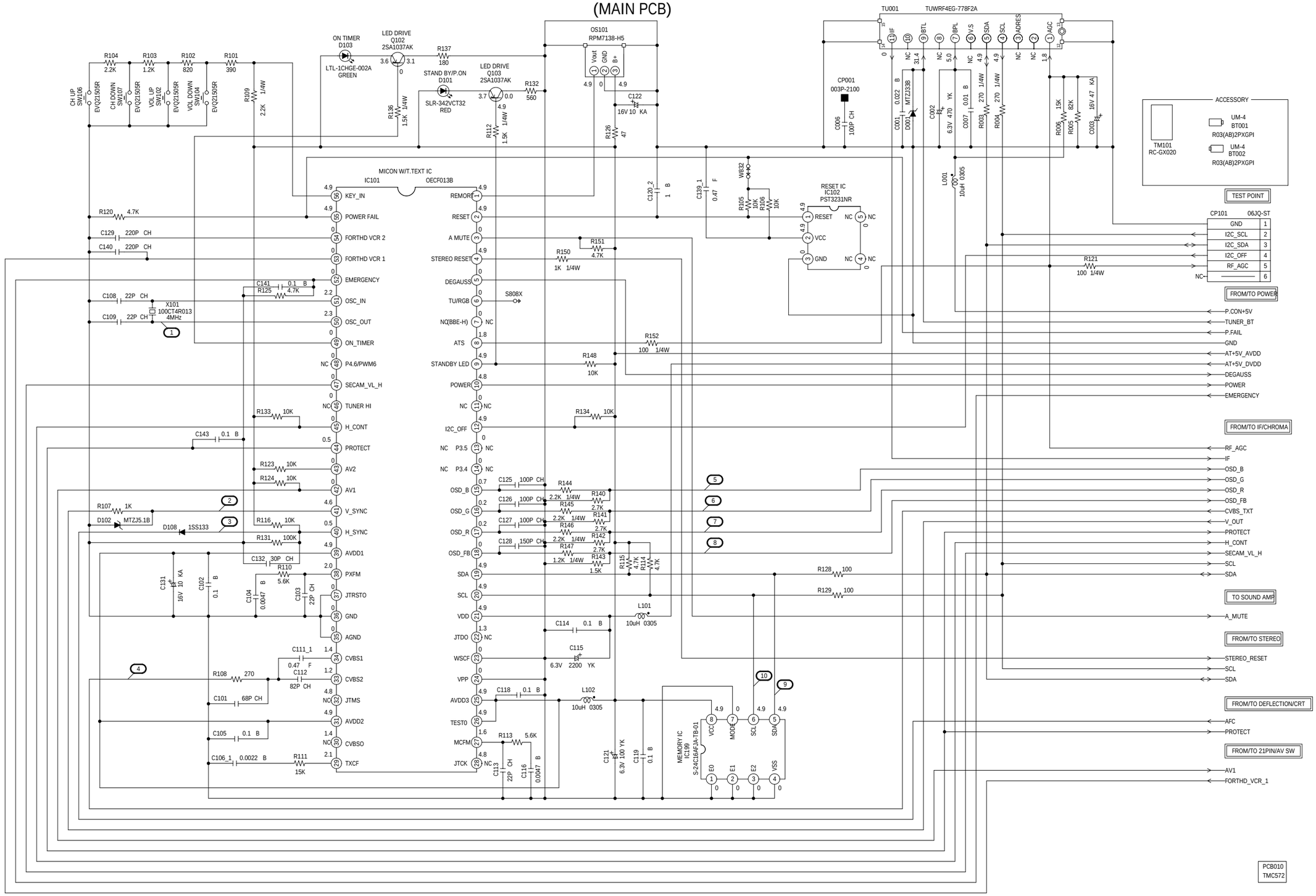


PRINTED CIRCUIT BOARDS
MAIN/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



MICON/TUNER SCHEMATIC DIAGRAM

(MAIN PCB)

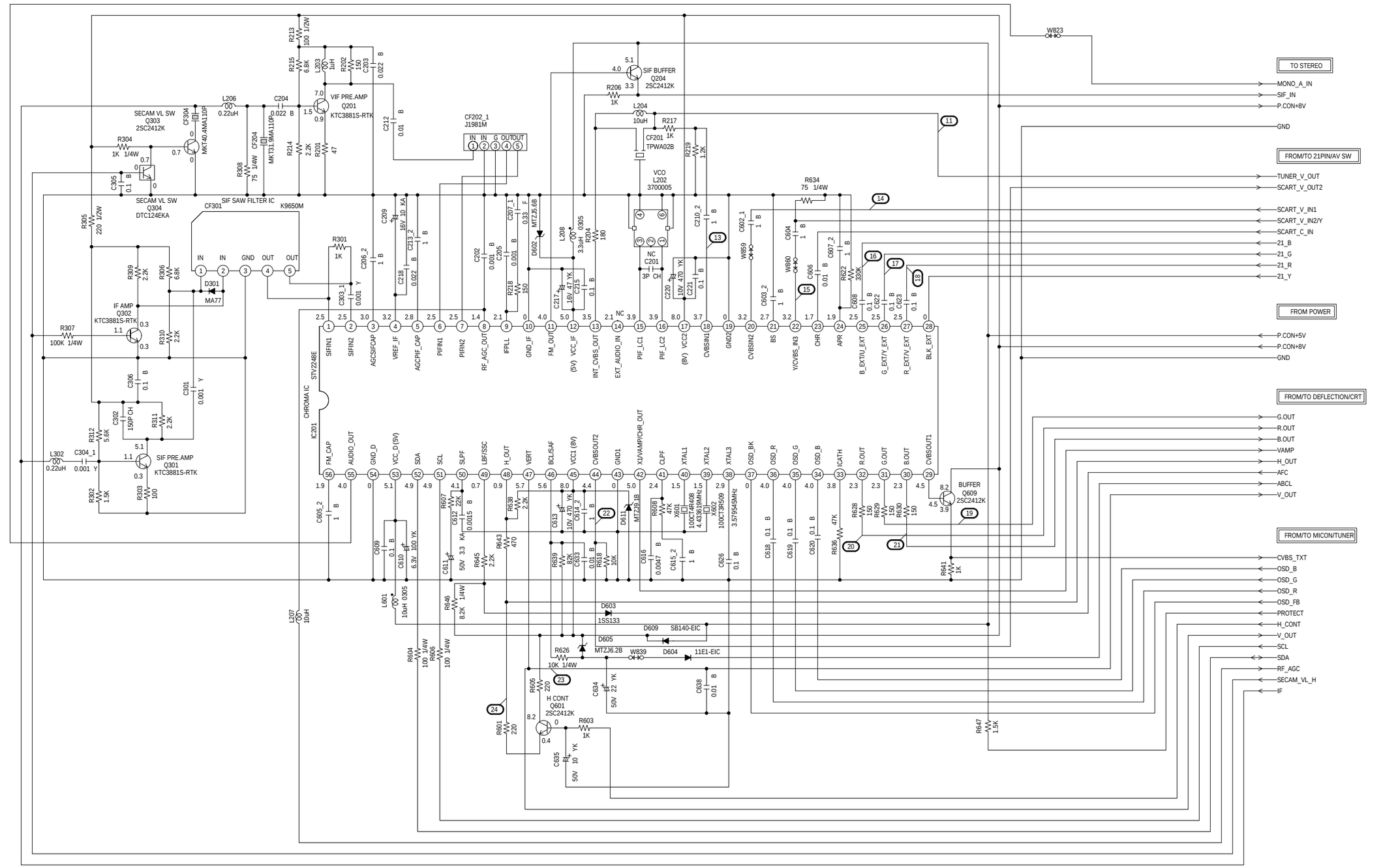


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

IF/CHROMA SCHEMATIC DIAGRAM

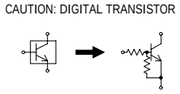
(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

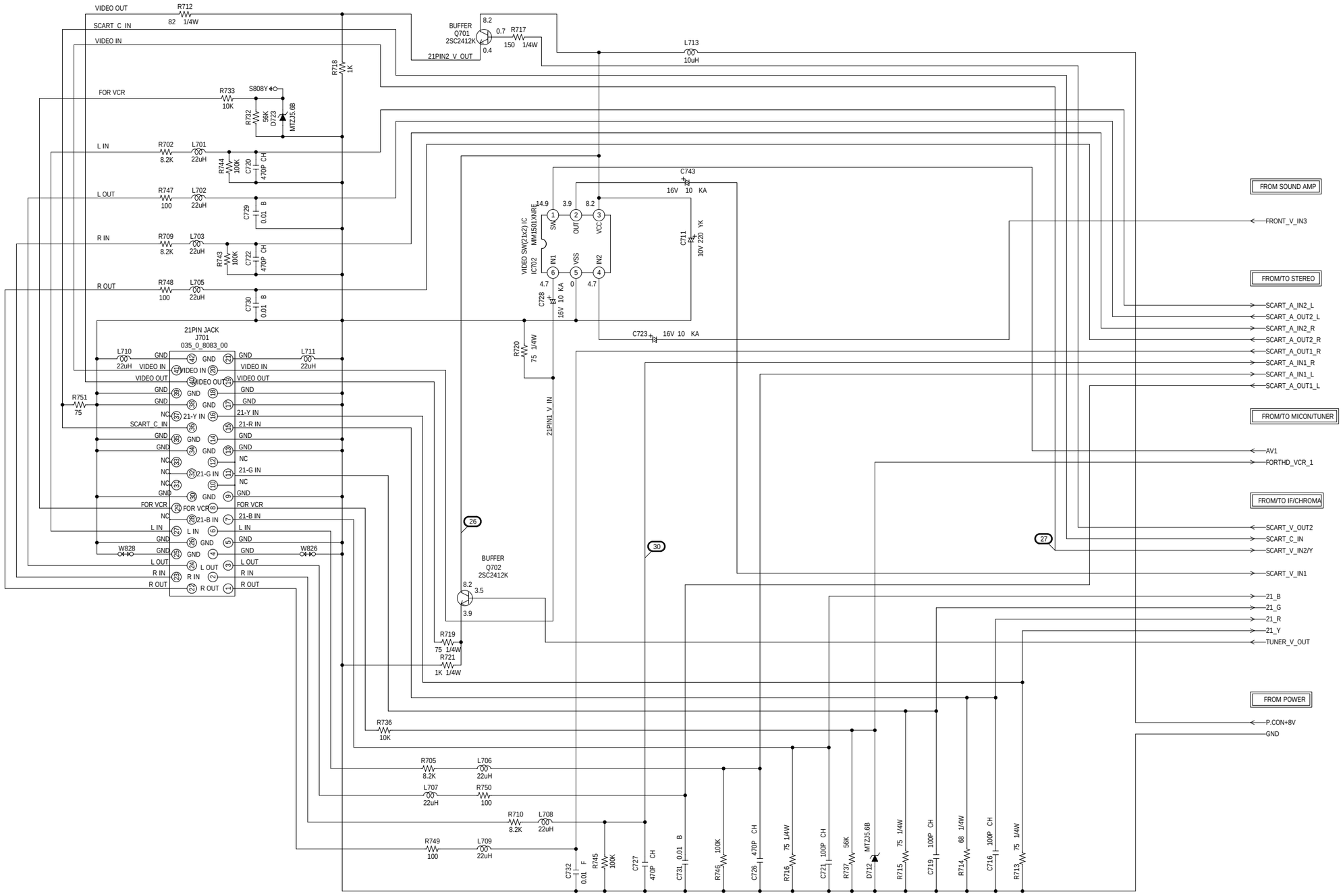
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR



21PIN/AV SW SCHEMATIC DIAGRAM

(MAIN PCB)

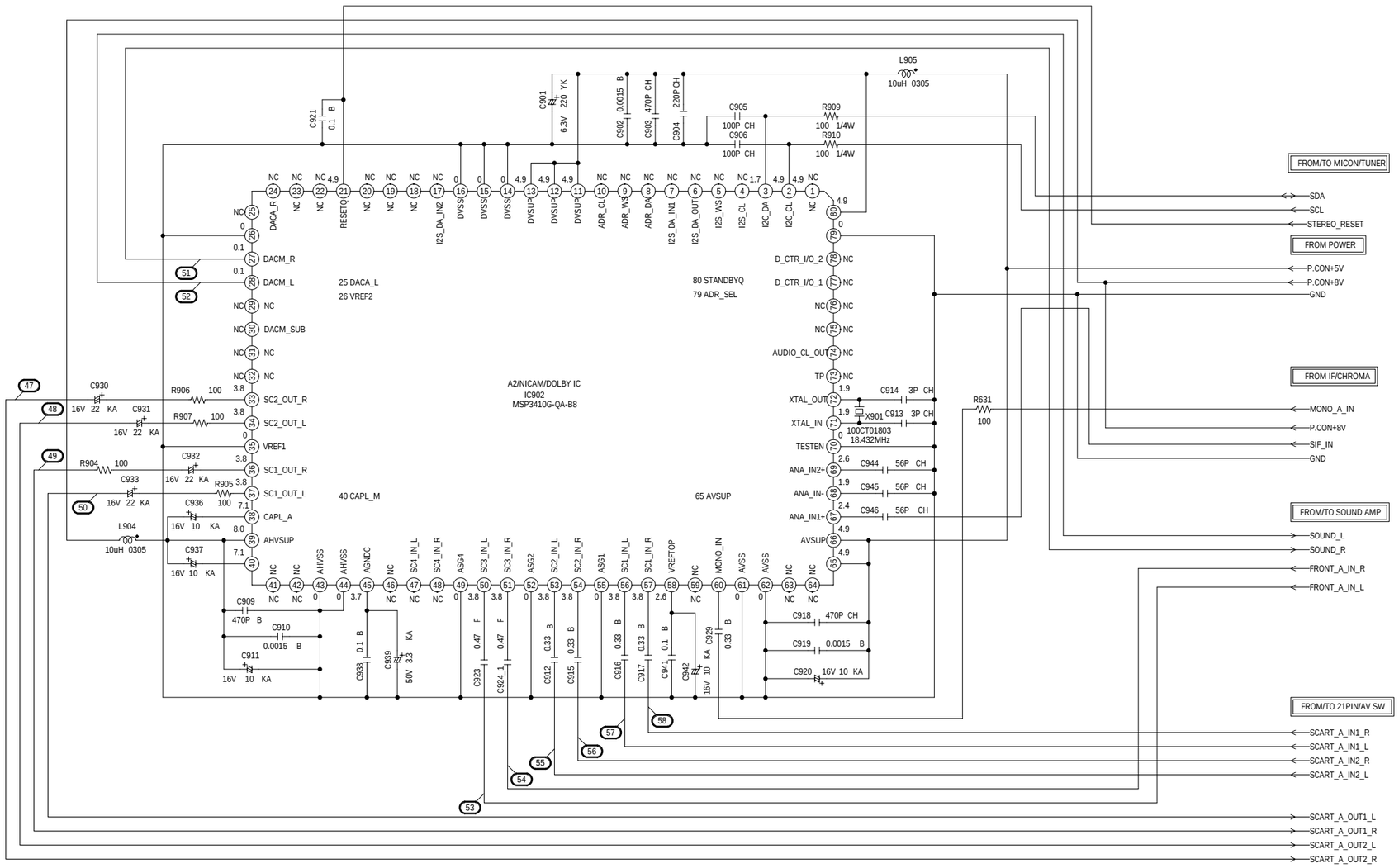


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

STEREO SCHEMATIC DTAGRAM

(MAIN PCB)



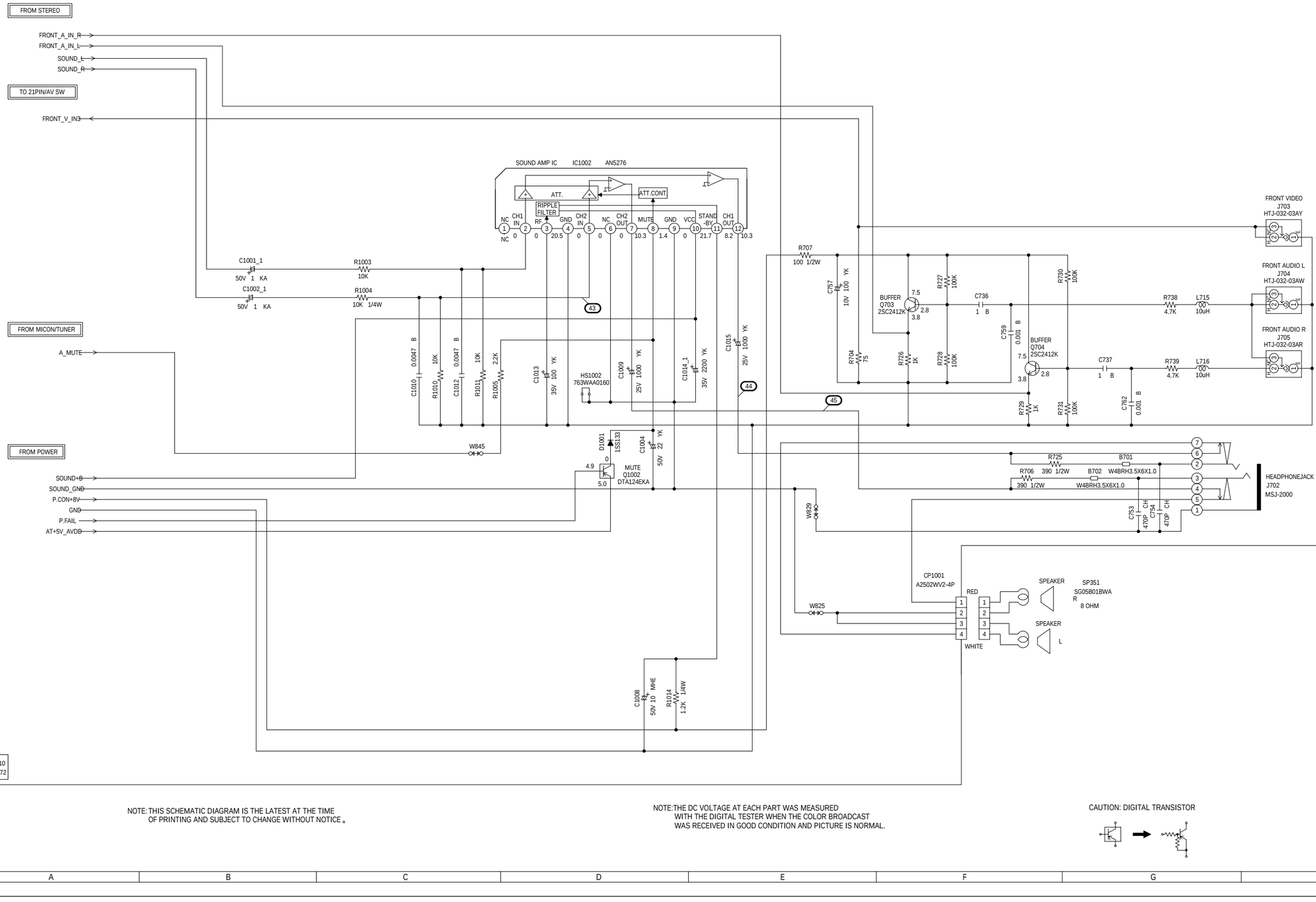
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCB010
TMC572

SOUND AMP SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

DEFLECTION/CRT SCHEMATIC DIAGRAM

(MAIN PCB)

(CRT PCB)

FROM/TO IF/CHROMA

B.OUT
R.OUT
G.OUT
AFC
VAMP
V_OUT
ABCL
H_OUT

FROM/TO MICON/TUNER

PROTECT
AFC

R602 560 1/4W
C629 1 B

V-DRIVE IC IC401 TDA8174A

1	2	3	4	5	6	7	8	9	10	11
POWER OUTPUT	OUTPUT STAGE Vs	TRIGGER INPUT	HEIGHT ADJ.	Vref. DECOUP.	GND	RAMP GENERATOR	BUFFER OUTPUT	INVERTING INPUT	Vs	FB. GENERATOR
16.4	26.5	5.5	6.7	4.5	0	8.9	9.6	4.5	26.0	4.9

R422 330K 1/4W
R423 220K 1/4W
R408 1K 1/4W
C408_1 50V 10 YK
C412 0.047 MMTV
R412 12K 1/4W
D403 11E1-EIC
C414_1 35V 100 YK

PROTECT Q403 DTC114EKA (3.5 / 0.5 / 0)

CP802A B2013H02-6P

GND	1	
CUT OFF	2	
B.OUT	3	
R.OUT	4	
G.OUT	5	
PROTECT	6	

CP803A B2013H02-4P

180V	1	
NC	2	
GND	3	
HEATER	4	

TO CRT

CP802B B2013H02-6P

1	GND	
2	CUT OFF	
3	B.OUT	
4	R.OUT	
5	G.OUT	
6	PROTECT	

CP803B B2013H02-4P

1	180V	
2	NC	
3	GND	
4	HEATER	

FROM DEFLECTION

RED AMP Q801 KTC3199_Y
GREEN AMP Q803 KTC3199_Y
BLUE AMP Q802 KTC3199_Y
(3.2 / 2.5 / 2.7)

D804 1SS133 R809 1.8K
D805 1SS133 R814 1.8K
D806 1SS133 R811 1.8K

R812 56 C811 270P CH R813 270 1/4W
R817 56 C810 270P CH R816 270
R818 56 C809 270P CH R815 270 1/4W

D801 1SS133 R801 220 RED AMP Q804 KTC4217
D802 1SS133 R808 220 GREEN AMP Q805 KTC4217
D803 1SS133 R810 220 BLUE AMP Q806 KTC4217
(120.0 / 2.5 / 2.9)

CD801_1 SM1642-001
CP801_1 A2361WV2-2P (GND / GND)

V801 A51LMV10X16N45 (R / G / B)

CP401 A1561WV2-A5P

L403 20416A
R424 1K 1W

W846
W874 W875 W876
TP022 TP023 TP024
R803 12K 2W
R807 12K 2W
R805 12K 2W
R802 2.7K 1/4W
R806 2.7K 1/4W
R804 2.7K 1/4W

R426 560 1/2W
R425 560 1/2W
R401 680 1/2W
R406 4.7K 1/4W
R418 47 1/4W
R419 390
R420 18K
R417 3.9K +-1%
V.LIN VR420 470 METAL C417 50V 22 YK
C418 25V 1000 YK
R416 2.2 1/2W
C422 100V 0.47 MKT
R428 1 1/2W
R407 1 1/2W
V.POSI VR401_1 2.2K METAL
D401 MTZJ30B
D402 MTZJ30B
HS401 763WAA0237

FROM POWER

GND
P.CON+8V
H.DRV+B
+B

R410 220 1W
D404 11E1-EIC

H.DRIVE Q402 2SC1627_Y (16.8 / 0.5 / 0)
C440_1 100V 0.01 MMTS
R446 470 1/2W
C446 50V 22 YK
T401_1 ETH09K14BZ
R427 100
HS402 763WSAA013
C442 1.25KV 0.0086 MPP
C444 1.25KV 470P MPP
C437_2 250V 0.33 PMS
L401 4.7mH 0909
R411 68 2W
C404 250V 2.2 YK 1/2W

H.OUTPUT Q401 2SD2499(LBOEC1) (130 / 0 / 0)

FB401 FQI-21B002

130	COL	HV
119	E180	
117	B+	
NC	AFC	
7.6	HEATER	F
0	GND	S
NC	E9	GND (0)
NC	E15	ABL (24.6)
64.0	E25	

D408 11EQS04N
R403 1.5K 1/4W

B_SHORT

D406 1E1-EIC
R402 180 2W
D405 AU02A-EIC
D410 AU02A-EIC
W816
R430 100K 1/4W
C403 35V 470 YK
C448 250V 22 YK
D407 1.1E1-EIC
R421 82K 1/2W
C407 100V 0.1 MKT

FOCUS
SCREEN

CP806_1
FOCUS
SCREEN

C802 2KV 0.001 B
R819 2.2 2W

CRT SOCKET J801 ISHS53S
(101.6 / 6.4 / NC / 0)

PCB110 TCC433

PCB010 TMC572

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR

POWER SCHEMATIC DIAGRAM

(MAIN PCB)

3A 125V

D526 FE201-6L49 — C531 35V 1000 MHE — ICP502 20P_3000 — R543 0.39 3W

D506 1SS133 — R528 10K 1/4W — RELAY SW Q505 KTC3203_Y (11.5 / 0 / 0)

D520 30DF6-FC — C517_1 2KV 680P RR — B504 W48RH3.5X6X1.0 — C541 160V 100 YXF

R521 0.82 3W — R524 47K 1/4W — C503_1 100V 10 YK — R530 5.6K 1/4W — R545 6.8K 1/2W — R544 6.8K 1/2W — R532 22K 1/4W — EMERGENCY Q509 2SA1624 (115 / 115 / 0)

RY501 ALKS321 — C525 250V 0.001 KX

P.CON SW Q513 2SA1371 (31.9 / 21.9 / 31.2) — R546 10K 1/4W — R547 10K 1/4W — P.CON SW Q514 2SC2909 (0 / 0.6 / 0) — R548 10K

W817 — W803 — W844 — W842

R503 3.9 7W — D503 RM11C-EIC — R509 0.22 1W — D502 RM11C-EIC — C506 2KV 0.001 B — C507 2KV 0.001 B — C505_2 400V 82 USR — R531 1.5M 1/2W — R552 1.5M 1/2W — D501 RM11C-EIC — D504 RM11C-EIC — D528 MTZ118B

TH501 B59209-J80-A10

9V REG.IC IC502 KIA78R09API — IN / OUT / GND / SW (11.5 / 8.9 / 0 / 5.1) — D527 11E1-EIC

D513 21DQ09N — D516 21DQ09N — C515 16V 1000 YK — C518_1 50V 4.7 YK

HS502 763WAA0187 — C523 10V 220 YK — C502_2 1 B

R501 1.5M 1/2W — C526_1 275V 0.22 ECQUL — COIL,LINE FILTER L501 0R8A393F28Y — C501_1 275V 0.22 ECQUL

T501_1 — 81350864 (17.3 / 8.5 NC / 0 / 108.2 / 0 / 0 / 11.2 / 8.4) — 272 / 304 / 304 / 342 / 14.5 / 0 / 14.5

ICP501 20P 7000 — D517 1N4937 — R550 100 1/2W — C511 16V 2200 YK — R507 2.2K — D511 MTZJ12BT-77 — P.FAIL Q503 2SA1037AK (4.9 / 4.2 / 4.9) — R502 10K — D509 MTZJ5.1B

6V REG. IC IC503 KIA278R06PI — IN / OUT / GND / SW (8.3 / 6.0 / 0 / 2.6 NC)

D512 SB140-EIC — D515 SB140-EIC

B501 W5RH3.5X5X1.0 — C532 2KV 0.0027 R — 343.6 / 4.8 / 0.6 — POWER Q501 2SK2651-01MR — C536_1 0.047 MMTV — R534 330 1W — D530 1SS133 — D532 1N4937 — D531 MTZ115B — R535 2.2K 1/4W — R536 2.2K 1/4W — R510 220 1/4W

FEED BACK IC506 LTV-817M-VB (14.8 / 6.7 / 0.4 / 5.6) — R519 270 1/4W

D507 1SS133 — D533 MTZJ5.6B — D508 1SS133 — D521 1SS133 — D519 1SS133 — D514 1SS133 — R518 120K 1/4W — R517 1.5K 1/4W — R512 10K — C509 0.01 B — C543 0.001 B — FEED BACK SWITCHING Q507 KTC3198 (5.6 / 6.1 / 5.5) — R540 100 — D525 MTZJ5.6B — R508 5.6K +-1% — VR501 2.2K

R529 680 1/4W — POWER Q502 KTC3203_Y (4.8 / 0.4 / 0) — C508 0.01 B — C537_3 0.47 MMT — C524 0.01 B — R516 1.2 1W — C539 50V 10 YK — R511 2.2K 1/4W — HS501 763WAA0178 — C540 250V 0.0022 KX

P.CON SW Q511 KTA1281_Y (5.3 / 5.3 / 0) — W809 0.1 B — D505 11E1-EIC — R538 10K — R537 560 — P.CON SW Q510 DTC124EKA (5.3 / 0) — R542 1K — C533 6.3V 220 YK — HS503 763WAA0187 — C522 16V 10 KA

EMERGENCY Q508 DTC114TKA (4.9 / 0) — C530 0.1 B — R541 27K — C504 0.001 B — EMERGENCY Q512 DTA114EKA (5.0 / 4.9 / 0)

F501 5DT040H 14A_L_250V — FH502 EVF-528C — FH501 EVF-528C — 4A 250V

MAIN POWER SW SW501 ES892S22B

CP501 A3963WV2-3PD BLUE — BROWN — CP502 A1561WV2-2P

AC230V-240V_50Hz CD501_3 1206655823

L502 W5T29X7.5X19

DEGAUSS COIL L503 8R200015

TO STEREO: P.CON+8V, P.CON+5V, GND

TO DEFLECTION/CRT: H.DRV+B, +B, P.CON+8V, GND

TO SOUND AMP: SOUND+B, SOUND_GND, P.CON+8V, AT+5V_AVDD, P.FAIL, GND

TO 21PIN/AV SW: GND, P.CON+8V

TO IF/CHROMA: GND, P.CON+8V, P.CON+5V

FROM/TO MICON/TUNER: P.FAIL, TUNER_BT, DEGAUSS, POWER, AT+5V_AVDD, AT+5V_DVDD, P.CON+5V, EMERGENCY, GND

PCB010 TMC572

7A 125V — 3A 125V — 4A 250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 4A 250V(F501)AND 7A 125V(ICP501) 3A 125V(ICP502).

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 250V(F501) ET 7A 125(ICP501) AND 3A 125V(IC502).

CAUTION: ICP501 AND ICP502 ARE MANUFACTURED BY SKYGATE CO,LTD. TYPE 20N.

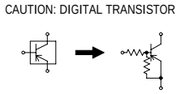
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

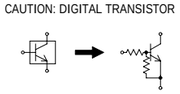
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR

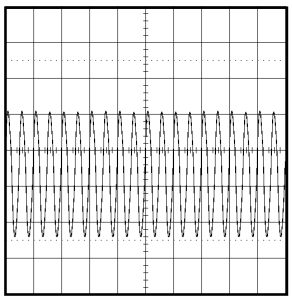


WAVEFORMS

MICON/TUNER

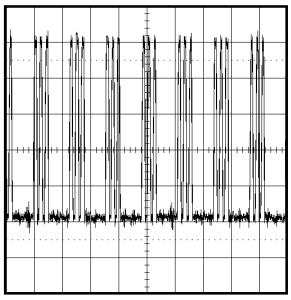
0.5µs
1V

1



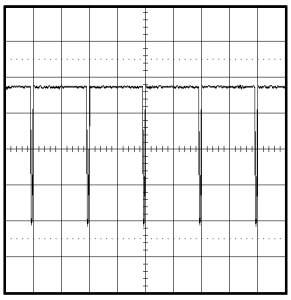
50µs
100mV

6



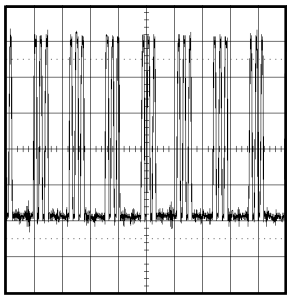
10ms
1V

2



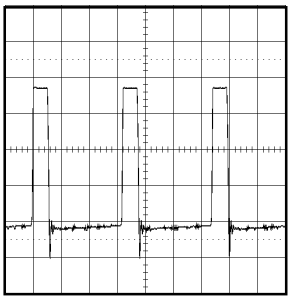
50µs
100mV

7



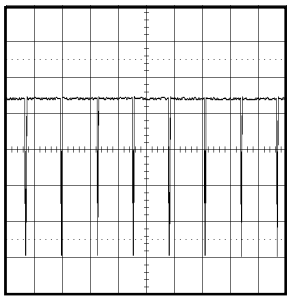
20µs
1V

3



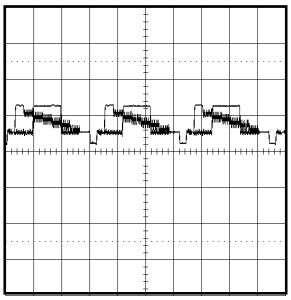
50µs
0.5V

8



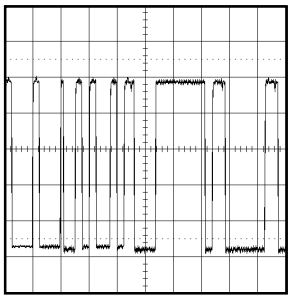
20µs
1V

4



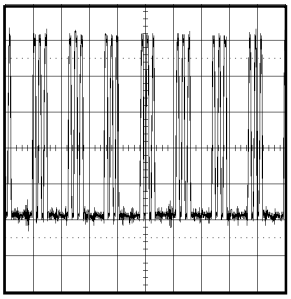
0.2ms
1V

9



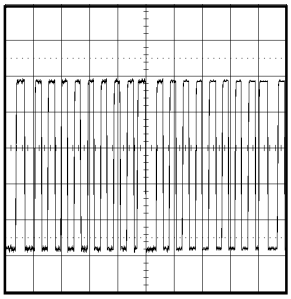
50µs
100mV

5



0.2ms
1V

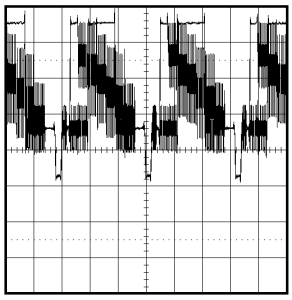
10



IF/CHROMA

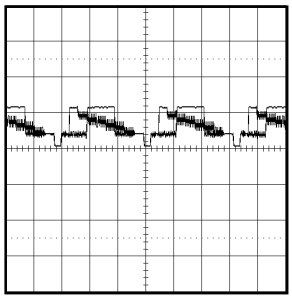
20µs
0.5V

11



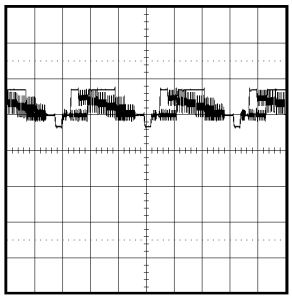
20µs
1V

13



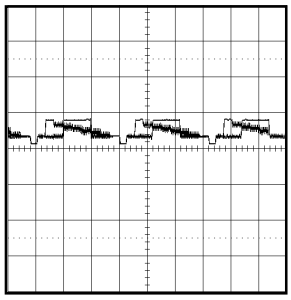
20µs
1V

14



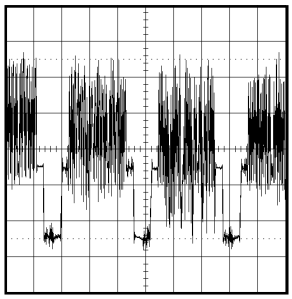
20µs
1V

15



20µs
100mV

16

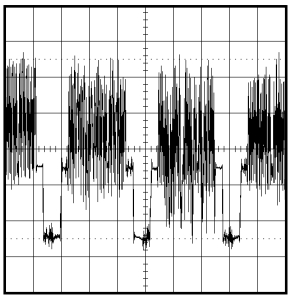


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

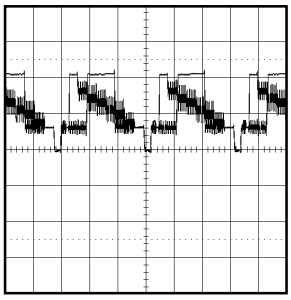
20µs
1V

⑰



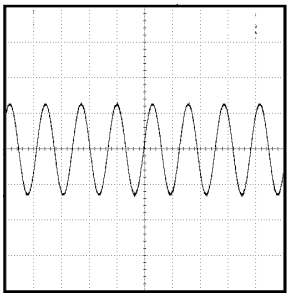
20µs
1V

㉒



2ms
200mV

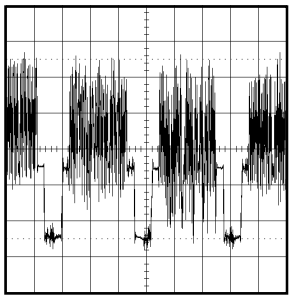
㉚



DEFLECTION/CRT

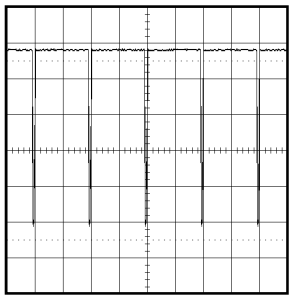
20µs
100mV

⑱



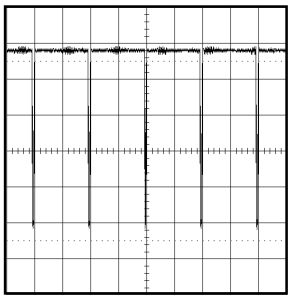
10ms
1V

㉓



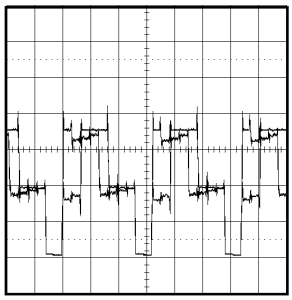
10ms
1V

㉝



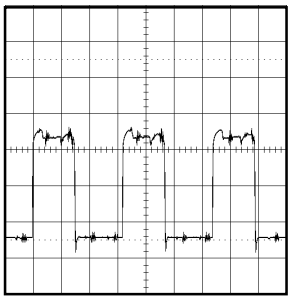
20µs
1V

⑲



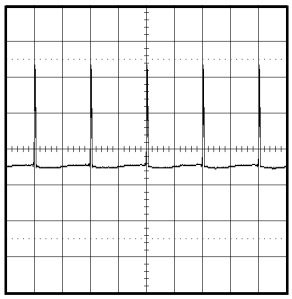
20µs
200mV

㉔



10ms
10V

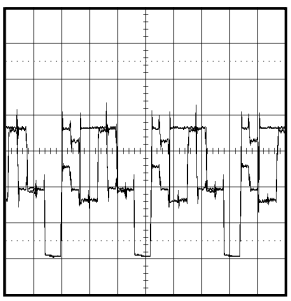
㉞



21PIN/AV SW

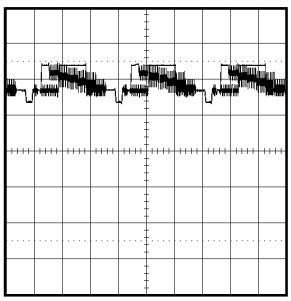
20µs
1V

⑳



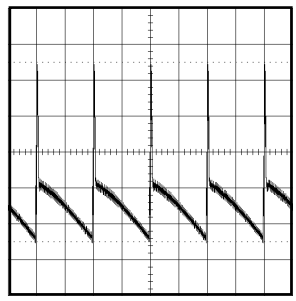
20µs
1V

㉖



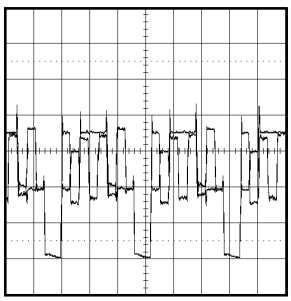
10ms
10V

㉟



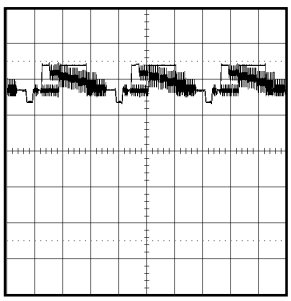
20µs
1V

㉑



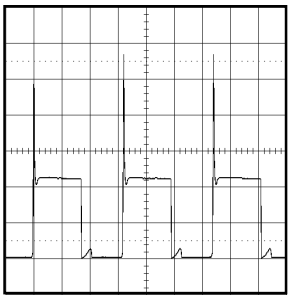
20µs
1V

㉗



20µs
10V

㊱



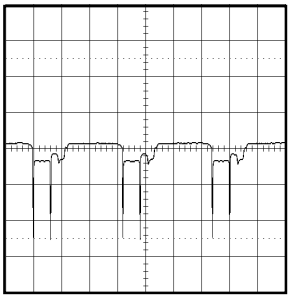
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

SOUND AMP

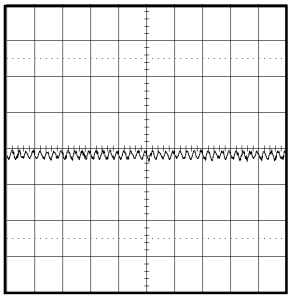
20µs
5V

37



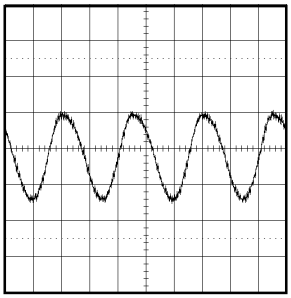
2ms
0.5V

43



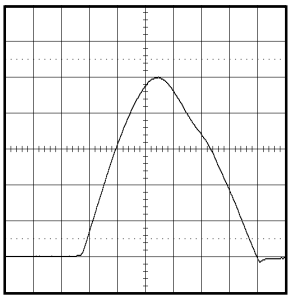
0.2ms
0.5V

49



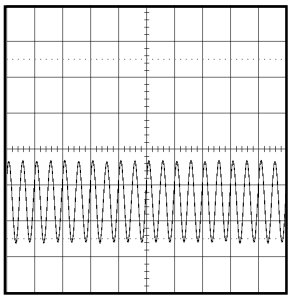
2µs
200V

38



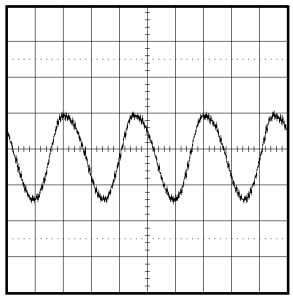
0.2ms
5V

44



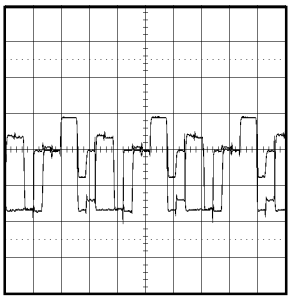
0.2ms
0.5V

50



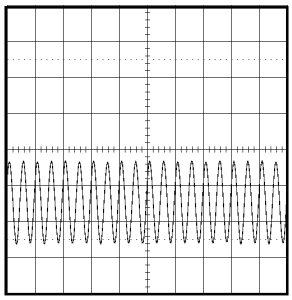
20µs
50V

39



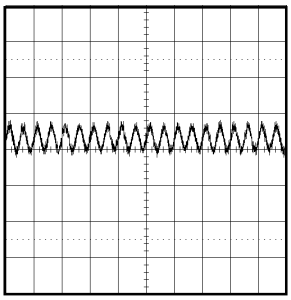
0.2ms
5V

45



0.2ms
100mV

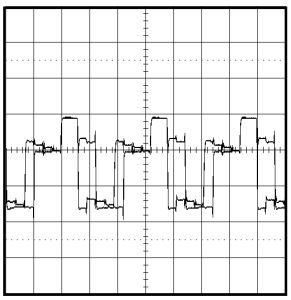
51



STEREO

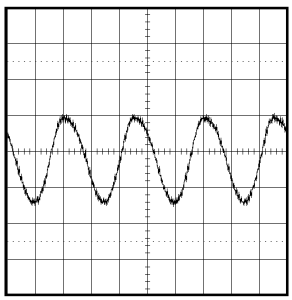
20µs
50V

40



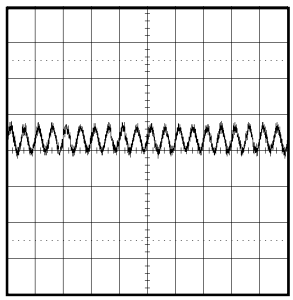
0.2ms
0.5V

47



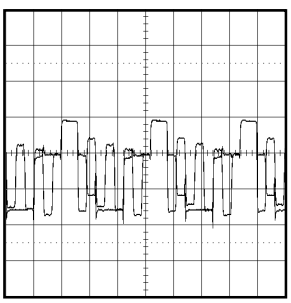
0.2ms
100mV

52



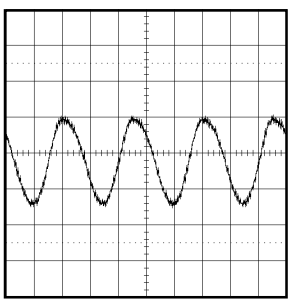
20µs
50V

41



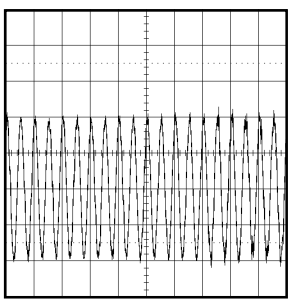
0.2ms
0.5V

48



0.2ms
200mV

53

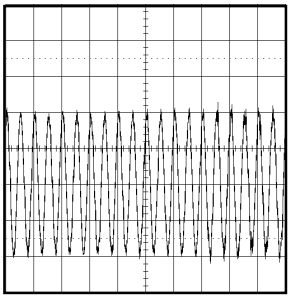


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

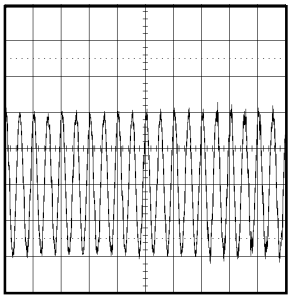
0.2ms
200mV

54



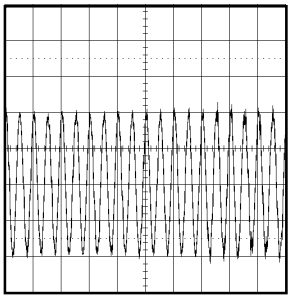
0.2ms
200mV

55



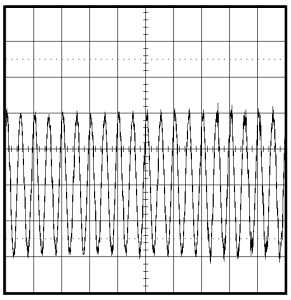
0.2ms
200mV

56



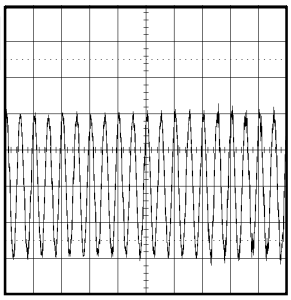
0.2ms
200mV

57



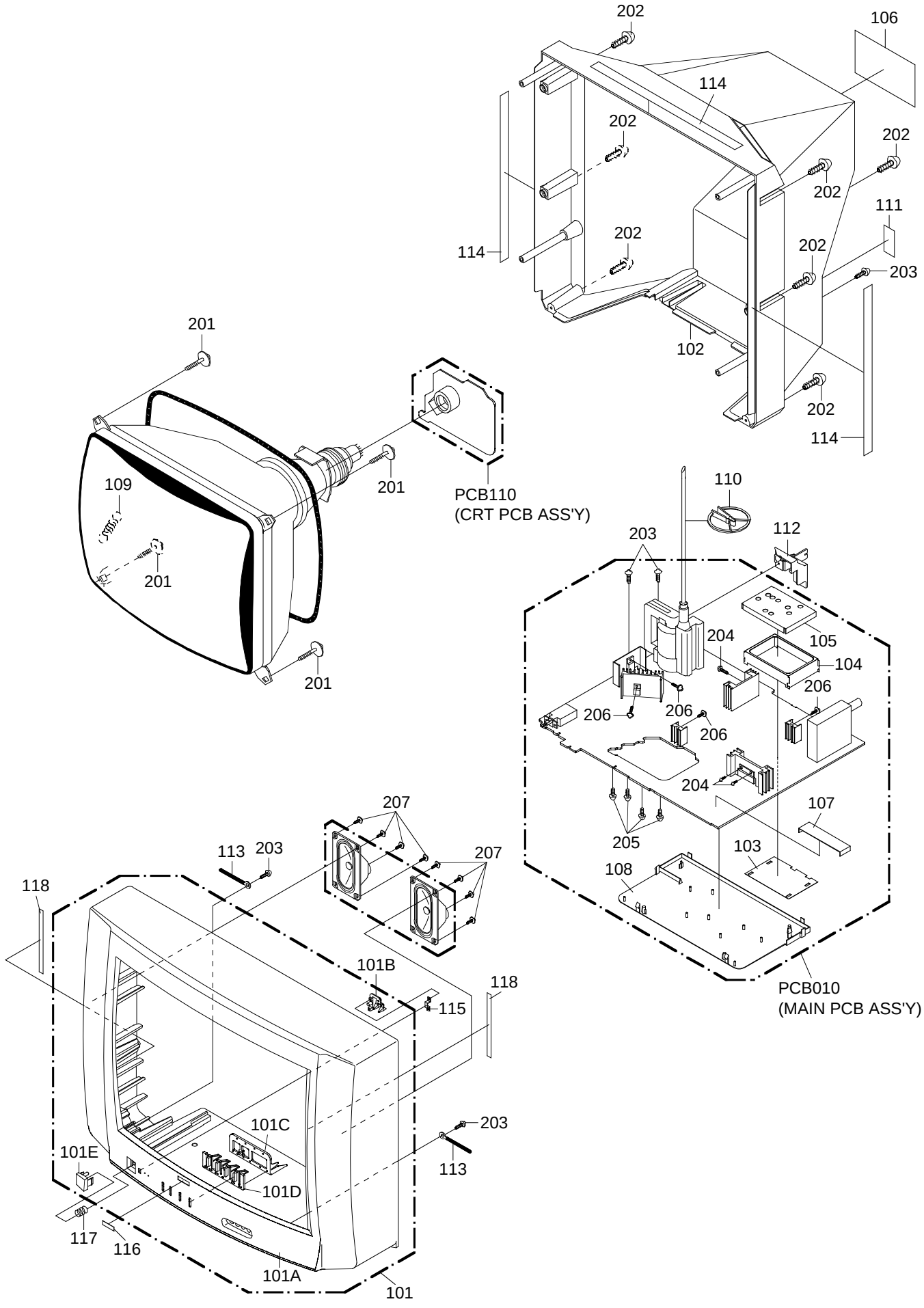
0.2ms
200mV

58



NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	AE002316	A3M514Y720	CABINET,FRONT ASSY	
101A	AE002317	701UPJA135	CABINET,FRONT	
101B	AE001111	713UPAA001	GUIDE,REMOCON	
101C	AE001112	735UPAA014	BUTTON,BASE	
101D	AE002318	735UPBA036	BUTTON,FRAME	
101E	AE002319	735UPBA035	BUTTON,POWER	
102	AE002320	A3M514Y740	CABINET,BACK ASSY	
103	AE000796	752WSAA006	PLATE,SHIELD	
104	AE000797	752WSAA008	SHIELD,CASE	
105	AE000798	752WSAA013	SHIELD,LID	
106	AE002321	722549A254	SHEET,RATING	
107	AE000515	752WSA0087	SHIELD,IC	
108	AE001912	755WPAA016	COVER,PCB	
109	BZ710258	741WUA0001	SPRING,EARTH	
110	BZ710260	899HV3T000	HOLDER,ANODE WIRE	
111	AE000790	7230007471	SHEET,JACK	
112	AE001119	761WPA0254	HOLDER,FBT	
113	BZ710039	8995034000	CORD CLIP UL CO.	
114	AE000804	800UQ00009	FELT SHEET	
115	AE001116	711WPAA080	PLATE,FRONT	
116	AE001117	723549A009	BADGE,BRAND	
117	AE000795	743WKA0040	SPRING,BUTTON	
118	AE000003	800WQ00045	FELT SHEET	
201	AD302054	8141J50C54	SCREW,TAP TITE(P) GW22	5x35
202	BZ710035	8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
203	BZ710031	8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
204	BZ710018	8107630804	SCREW,TAP TITE(S) BRAZIER	3x8
205	BZ710019	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
206	BZ710239	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
207	BZ710030	8110630804	SCREW,TAP TITE(P) BRAZIER	3x8
---	AE002322	723000C368	SHEET,BAR CODE	
---	AE000010	791WHA0085	LAMIFILM,BAG	
---	AE001121	792UHAA027	PACKAGE,TOP	
---	AE001122	792UHAA028	PACKAGE,BOTTOM	
---	AE002323	793UCDB232	GIFT BOX	
---	AE002324	A3M514Y975	INSTRUCTION BOOK KIT	
---	AE001642	J3M40717A	REGISTRATION CARD	
---	AE002602	J3M50699A	CORRECTION SHEET	
---	AE002325	J3M51401A	INSTRUCTION BOOK	
---	AE002326	J3M51407A	QUICK SET-UP SHEET	
---	AE002616	JB5XD400	POLYBAG,INSTRUCTION(RED CAUTION)	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		RESISTORS		
R003	AE000356	R002T4271J	RC	270 OHM 1/4W
R004	AE000356	R002T4271J	RC	270 OHM 1/4W
R005	AE001013	R903N8823J	RC	82K OHM 1/8W
R006	AE000970	R903N8153J	RC	15K OHM 1/8W
R101	AE000977	R903N8391J	RC	390 OHM 1/8W
R102	AE000987	R903N8821J	RC	820 OHM 1/8W
R103	AD300658	R903N8122J	RC	1.2K OHM 1/8W
R104	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R105	AE000966	R903N8103J	RC	10K OHM 1/8W
R106	AE000966	R903N8103J	RC	10K OHM 1/8W
R107	AD300780	R903N8102J	RC	1K OHM 1/8W
R108	AE000972	R903N8271J	RC	270 OHM 1/8W
R109	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R110	AE000982	R903N8562J	RC	5.6K OHM 1/8W
R111	AE000970	R903N8153J	RC	15K OHM 1/8W
R112	AD301301	R002T4152J	RC	1.5K OHM 1/4W
R113	AE000982	R903N8562J	RC	5.6K OHM 1/8W
R114	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R115	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R116	AE000966	R903N8103J	RC	10K OHM 1/8W
R120	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R121	BZ210273	R002T4101J	RC	100 OHM 1/4W
R123	AE000966	R903N8103J	RC	10K OHM 1/8W
R124	AE000966	R903N8103J	RC	10K OHM 1/8W
R125	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R126	AE000497	R801R7470J	RC	47 OHM 1/10W
R128	AE000965	R903N8101J	RC	100 OHM 1/8W
R129	AE000965	R903N8101J	RC	100 OHM 1/8W
R131	AE000967	R903N8104J	RC	100K OHM 1/8W
R132	AE000981	R903N8561J	RC	560 OHM 1/8W
R133	AE000966	R903N8103J	RC	10K OHM 1/8W
R134	AE000966	R903N8103J	RC	10K OHM 1/8W
R136	AD301301	R002T4152J	RC	1.5K OHM 1/4W
R137	AE001009	R903N8181J	RC	180 OHM 1/8W
R140	AE000973	R903N8272J	RC	2.7K OHM 1/8W
R141	AE000973	R903N8272J	RC	2.7K OHM 1/8W
R142	AE000973	R903N8272J	RC	2.7K OHM 1/8W
R143	AE000969	R903N8152J	RC	1.5K OHM 1/8W
R144	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R145	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R146	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R147	BZ210124	R002T4122J	RC	1.2K OHM 1/4W
R148	AE000966	R903N8103J	RC	10K OHM 1/8W
R150	BZ210119	R002T4102J	RC	1K OHM 1/4W
R151	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R152	BZ210273	R002T4101J	RC	100 OHM 1/4W
R201	AE001355	R903N8470J	RC	47 OHM 1/8W
R202	AE000968	R903N8151J	RC	150 OHM 1/8W
R204	AE001009	R903N8181J	RC	180 OHM 1/8W
R206	AD300780	R903N8102J	RC	1K OHM 1/8W
R213	AE000347	R002T2101J	RC	100 OHM 1/2W
R214	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R215	AE000983	R903N8682J	RC	6.8K OHM 1/8W
R217	AD300780	R903N8102J	RC	1K OHM 1/8W
R218	AE000968	R903N8151J	RC	150 OHM 1/8W
R219	AD300658	R903N8122J	RC	1.2K OHM 1/8W
R301	AD300780	R903N8102J	RC	1K OHM 1/8W
R302	AE000969	R903N8152J	RC	1.5K OHM 1/8W
R303	AE000965	R903N8101J	RC	100 OHM 1/8W
R304	BZ210119	R002T4102J	RC	1K OHM 1/4W
R305	AE000350	R002T2221J	RC	220 OHM 1/2W
R306	AE000983	R903N8682J	RC	6.8K OHM 1/8W
R307	BZ210164	R002T4104J	RC	100K OHM 1/4W
R308	BZ210107	R002T4750J	RC	75 OHM 1/4W
R309	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R310	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R311	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R312	AE000982	R903N8562J	RC	5.6K OHM 1/8W
R401	AE000354	R002T2681J	RC	680 OHM 1/2W
⚠R402	BZ210246	R3X18A181J	R,METAL OXIDE	180 OHM 2W
R403	AD301301	R002T4152J	RC	1.5K OHM 1/4W
R406	BZ210122	R002T4472J	RC	4.7K OHM 1/4W
R407	BZ210150	R002T2010J	RC	1 OHM 1/2W
R408	BZ210119	R002T4102J	RC	1K OHM 1/4W
⚠R410	BZ210240	R3X181221J	R,METAL OXIDE	220 OHM 1W
⚠R411	BZ210041	R635U2680J	R,FUSE	68 OHM 1/2W
R412	AE001007	R002T4123J	RC	12K OHM 1/4W

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		RESISTORS		
R416	BZ210053	R002T22R2J	RC	2.2 OHM 1/2W
R417	AE000490	R4X5T6392F	R,METAL	3.9K OHM 1/6W
R418	AE000486	R002T4470J	RC	47 OHM 1/4W
R419	AE000977	R903N8391J	RC	390 OHM 1/8W
R420	AE001010	R903N8183J	RC	18K OHM 1/8W
R421	AE000484	R002T2823J	RC	82K OHM 1/2W
R422	BZ210100	R002T4334J	RC	330K OHM 1/4W
R423	BZ210125	R002T4224J	RC	220K OHM 1/4W
⚠R424	BZ210153	R3X181102J	R,METAL OXIDE	1K OHM 1W
R425	AE000145	R002T2561J	RC	560 OHM 1/2W
R426	AE000145	R002T2561J	RC	560 OHM 1/2W
R427	AE002525	R801R7101J	RC	100 OHM 1/10W
R428	BZ210150	R002T2010J	RC	1 OHM 1/2W
R430	BZ210164	R002T4104J	RC	100K OHM 1/4W
R446	AE000353	R002T2471J	RC	470 OHM 1/2W
⚠R501	BZ210206	R002T2155J	RC	1.5M OHM 1/2W
R502	AE000966	R903N8103J	RC	10K OHM 1/8W
⚠R503	AE000491	R5X2AE3R9J	R,CEMENT	3.9 OHM 7W
R507	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R508	BZ210244	R4X5T6562F	R,METAL	5.6K OHM 1/6W
⚠R509	BZ210190	R63581R22J	R,FUSE	0.22 OHM 1W
R510	BZ210135	R002T4221J	RC	220 OHM 1/4W
R511	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R512	AE000966	R903N8103J	RC	10K OHM 1/8W
⚠R516	AD300784	R3X1811R2J	R,METAL OXIDE	1.2 OHM 1W
R517	AD301301	R002T4152J	RC	1.5K OHM 1/4W
R518	AE000962	R002T4124J	RC	120K OHM 1/4W
R519	AE000356	R002T4271J	RC	270 OHM 1/4W
⚠R521	BZ210156	R3X28BR82J	R,METAL OXIDE	0.82 OHM 3W
R524	BZ210118	R002T4473J	RC	47K OHM 1/4W
R528	BZ210182	R002T4103J	RC	10K OHM 1/4W
R529	AE000964	R002T4681J	RC	680 OHM 1/4W
R530	BZ210166	R002T4562J	RC	5.6K OHM 1/4W
R531	BZ210206	R002T2155J	RC	1.5M OHM 1/2W
R532	BZ210192	R002T4223J	RC	22K OHM 1/4W
⚠R534	BZ210217	R3X181331J	R,METAL OXIDE	330 OHM 1W
R535	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R536	BZ210126	R002T4222J	RC	2.2K OHM 1/4W
R537	AE000981	R903N8561J	RC	560 OHM 1/8W
R538	AE000966	R903N8103J	RC	10K OHM 1/8W
R540	AE000965	R903N8101J	RC	100 OHM 1/8W
R541	AE000974	R903N8273J	RC	27K OHM 1/8W
R542	AD300780	R903N8102J	RC	1K OHM 1/8W
⚠R543	AD302108	R3X28BR39J	R,METAL OXIDE	0.39 OHM 3W
R544	AE000482	R002T2682J	RC	6.8K OHM 1/2W
R545	AE000482	R002T2682J	RC	6.8K OHM 1/2W
R546	BZ210182	R002T4103J	RC	10K OHM 1/4W
R547	BZ210182	R002T4103J	RC	10K OHM 1/4W
R548	AE000966	R903N8103J	RC	10K OHM 1/8W
R550	AE000347	R002T2101J	RC	100 OHM 1/2W
R552	BZ210206	R002T2155J	RC	1.5M OHM 1/2W
R601	AD301598	R903N8221J	RC	220 OHM 1/8W
R602	AE000360	R002T4561J	RC	560 OHM 1/4W
R603	AD300780	R903N8102J	RC	1K OHM 1/8W
R604	BZ210273	R002T4101J	RC	100 OHM 1/4W
R605	AD301598	R903N8221J	RC	220 OHM 1/8W
R606	BZ210273	R002T4101J	RC	100 OHM 1/4W
R607	AE000971	R903N8223J	RC	22K OHM 1/8W
R608	AE000980	R903N8473J	RC	47K OHM 1/8W
R618	AE000966	R903N8103J	RC	10K OHM 1/8W
R622	AE000976	R903N8334J	RC	330K OHM 1/8W
R626	BZ210182	R002T4103J	RC	10K OHM 1/4W
R628	AE000968	R903N8151J	RC	150 OHM 1/8W
R629	AE000968	R903N8151J	RC	150 OHM 1/8W
R630	AE000968	R903N8151J	RC	150 OHM 1/8W
R631	AE002525	R801R7101J	RC	100 OHM 1/10W
R634	BZ210288	R00204750J	RC	75 OHM 1/4W
R636	AE000980	R903N8473J	RC	47K OHM 1/8W
R638	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R639	AE001013	R903N8823J	RC	82K OHM 1/8W
R641	AD300780	R903N8102J	RC	1K OHM 1/8W
R643	AE000978	R903N8471J	RC	470 OHM 1/8W
R645	AD300655	R903N8222J	RC	2.2K OHM 1/8W
R646	AE000488	R002T4822J	RC	8.2K OHM 1/4W
R647	AE000969	R903N8152J	RC	1.5K OHM 1/8W
R702	AE000386	R801R7822J	RC	8.2K OHM 1/10W
R704	AE000985	R903N8750J	RC	75 OHM 1/8W

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		RESISTORS		
R705	AE001012	R903N8822J	RC	8.2K OHM 1/8W
R706	AE000934	R002T2391J	RC	390 OHM 1/2W
R707	AE000347	R002T2101J	RC	100 OHM 1/2W
R709	AE000386	R801R7822J	RC	8.2K OHM 1/10W
R710	AE001012	R903N8822J	RC	8.2K OHM 1/8W
R712	AE001522	R002T4820J	RC	82 OHM 1/4W
R713	BZ210107	R002T4750J	RC	75 OHM 1/4W
R714	AE000361	R002T4680J	RC	68 OHM 1/4W
R715	BZ210107	R002T4750J	RC	75 OHM 1/4W
R716	BZ210107	R002T4750J	RC	75 OHM 1/4W
R717	AE000937	R002T4151J	RC	150 OHM 1/4W
R718	AD301003	R801R7102J	RC	1K OHM 1/10W
R719	BZ210107	R002T4750J	RC	75 OHM 1/4W
R720	BZ210288	R00204750J	RC	75 OHM 1/4W
R721	AD301200	R00204102J	RC	1K OHM 1/4W
R725	AE000934	R002T2391J	RC	390 OHM 1/2W
R726	AD300780	R903N8102J	RC	1K OHM 1/8W
R727	AE000967	R903N8104J	RC	100K OHM 1/8W
R728	AE000967	R903N8104J	RC	100K OHM 1/8W
R729	AD300780	R903N8102J	RC	1K OHM 1/8W
R730	AE000967	R903N8104J	RC	100K OHM 1/8W
R731	AE000967	R903N8104J	RC	100K OHM 1/8W
R732	BZ210074	R801R7563J	RC	56K OHM 1/10W
R733	AD301728	R801R7103J	RC	10K OHM 1/10W
R736	AE000966	R903N8103J	RC	10K OHM 1/8W
R737	BZ210143	R903N8563J	RC	56K OHM 1/8W
R738	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R739	AE000979	R903N8472J	RC	4.7K OHM 1/8W
R743	AE000368	R801R7104J	RC	100K OHM 1/10W
R744	AE000368	R801R7104J	RC	100K OHM 1/10W
R745	AE000967	R903N8104J	RC	100K OHM 1/8W
R746	AE000967	R903N8104J	RC	100K OHM 1/8W
R747	AE002525	R801R7101J	RC	100 OHM 1/10W
R748	AE002525	R801R7101J	RC	100 OHM 1/10W
R749	AE000965	R903N8101J	RC	100 OHM 1/8W
R750	AE000965	R903N8101J	RC	100 OHM 1/8W
R751	AE000385	R801R7750J	RC	75 OHM 1/10W
R801	AD301598	R903N8221J	RC	220 OHM 1/8W
R802	BZ210201	R002T4272J	RC	2.7K OHM 1/4W
⚠R803	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W
R804	BZ210201	R002T4272J	RC	2.7K OHM 1/4W
⚠R805	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W
R806	BZ210201	R002T4272J	RC	2.7K OHM 1/4W
⚠R807	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W
R808	AD301598	R903N8221J	RC	220 OHM 1/8W
R809	AE001138	R903N8182J	RC	1.8K OHM 1/8W
R810	AD301598	R903N8221J	RC	220 OHM 1/8W
R811	AE001138	R903N8182J	RC	1.8K OHM 1/8W
R812	AE001011	R903N8560J	RC	56 OHM 1/8W
R813	AE000356	R002T4271J	RC	270 OHM 1/4W
R814	AE001138	R903N8182J	RC	1.8K OHM 1/8W
R815	AE000356	R002T4271J	RC	270 OHM 1/4W
R816	AE000972	R903N8271J	RC	270 OHM 1/8W
R817	AE001011	R903N8560J	RC	56 OHM 1/8W
R818	AE001011	R903N8560J	RC	56 OHM 1/8W
⚠R819	AE000610	R6358A2R2J	R,FUSE	2.2 OHM 2W
R904	AE000965	R903N8101J	RC	100 OHM 1/8W
R905	AE000965	R903N8101J	RC	100 OHM 1/8W
R906	AE002525	R801R7101J	RC	100 OHM 1/10W
R907	AE002525	R801R7101J	RC	100 OHM 1/10W
R909	BZ210273	R002T4101J	RC	100 OHM 1/4W
R910	BZ210273	R002T4101J	RC	100 OHM 1/4W
R1003	AE000966	R903N8103J	RC	10K OHM 1/8W
R1004	BZ210182	R002T4103J	RC	10K OHM 1/4W
R1005	AE000373	R801R7222J	RC	2.2K OHM 1/10W
R1010	AE000966	R903N8103J	RC	10K OHM 1/8W
R1011	AE000966	R903N8103J	RC	10K OHM 1/8W
R1014	BZ210124	R002T4122J	RC	1.2K OHM 1/4W
		CAPACITORS		
C001	AE000316	CS0RB04H4K	CC	0.022 UF 50V B
C002	BZ110189	E02LU0471M	CE	470 UF 6.3V
C003	AE000272	E50HU2470M	CE	47 UF 16V
C006	AE000457	CS0RCH412J	CC	100 PF 50V CH
C007	AE000312	CS0RB0414K	CC	0.01 UF 50V B
C101	AE000326	CS0RCH4U1J	CC	68 PF 50V CH
C102	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C103	AE000953	CS0KCH4H1J	CC	22 PF 50V CH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		CAPACITORS		
C104	AE000317	CS0RB04Q3K	CC	0.0047UF 50V B
C105	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C106	AE000315	CS0RB04H3K	CC	0.0022UF 50V B
C108	AE000953	CS0KCH4H1J	CC	22 PF 50V CH
C109	AE000953	CS0KCH4H1J	CC	22 PF 50V CH
C111	AE001001	CS0RF02Q5Z	CC	0.47 UF 16V F
C112	AE000327	CS0RCH4W1J	CC	82 PF 50V CH
C113	AE000953	CS0KCH4H1J	CC	22 PF 50V CH
C114	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C115	BZ110244	E02LT0222M	CE	2200 UF 6.3V
C116	AE000317	CS0RB04Q3K	CC	0.0047UF 50V B
C118	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C119	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C120	BZ110278	CS0RB0216K	CC	1 UF 16V B
C121	AE000335	E02LU0101M	CE	100 UF 6.3V
C122	BZ110096	E50HU2100M	CE	10 UF 16V
C125	AE000457	CS0RCH412J	CC	100 PF 50V CH
C126	AE000457	CS0RCH412J	CC	100 PF 50V CH
C127	AE000457	CS0RCH412J	CC	100 PF 50V CH
C128	AE000322	CS0RCH4E2J	CC	150 PF 50V CH
C129	AE000459	CS0RCH4H2J	CC	220 PF 50V CH
C131	BZ110096	E50HU2100M	CE	10 UF 16V
C132	AE000999	CS0RCH431J	CC	30 PF 50V CH
C139	AE001001	CS0RF02Q5Z	CC	0.47 UF 16V F
C140	AE000459	CS0RCH4H2J	CC	220 PF 50V CH
C141	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C143	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C201	AE000321	CS0RCH430C	CC	3 PF 50V CH
C202	AE000229	CS0RB0413K	CC	0.001 UF 50V B
C203	AE000316	CS0RB04H4K	CC	0.022 UF 50V B
C204	AE000316	CS0RB04H4K	CC	0.022 UF 50V B
C205	AE000229	CS0RB0413K	CC	0.001 UF 50V B
C206	BZ110278	CS0RB0216K	CC	1 UF 16V B
C207	AE001003	CS0RF04L5Z	CC	0.33 UF 50V F
C209	BZ110096	E50HU2100M	CE	10 UF 16V
C210	BZ110278	CS0RB0216K	CC	1 UF 16V B
C212	AE000312	CS0RB0414K	CC	0.01 UF 50V B
C213	BZ110278	CS0RB0216K	CC	1 UF 16V B
C215	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C217	BZ210177	E02LU2470M	CE	47 UF 16V
C218	AE000316	CS0RB04H4K	CC	0.022 UF 50V B
C220	BZ110042	E02LU1471M	CE	470 UF 10V
C221	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C301	AE001136	CS0KY0313M	CC	0.001 UF 25V Y
C302	AE000322	CS0RCH4E2J	CC	150 PF 50V CH
C303	AE001136	CS0KY0313M	CC	0.001 UF 25V Y
C304	AE001136	CS0KY0313M	CC	0.001 UF 25V Y
C305	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C306	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C403	BZ110149	E02LT4471M	CE	470 UF 35V
C404	BZ110180	E02LTD2R2M	CE	2.2 UF 250V
C407	AE000345	P235W1104J	CMP	0.1 UF 100V MKT
C408	AD301348	E02LU5100M	CE	10 UF 50V
C412	AE000343	P232T0473J	CMPL	0.047 UF 50V MMTV
⚠C414	AD301434	E02LU4101M	CE	100 UF 35V
C417	BZ110205	E02LU5220M	CE	22 UF 50V
C418	BZ110053	E02LF3102M	CE	1000 UF 25V
C422	AE000477	P235W1474J	CMP	0.47 UF 100V MKT
⚠C437	BZ110174	P4J7F3334J	CMPP	0.33 UF 250V PMS
C440	AE000416	P232W1103J	CMP	0.01 UF 100V MMTS
⚠C442	BZ110258	P4N8FJ862H	CMPP	0.0086UF 1.25KV
C444	AD301318	P4N8FJ471J	CMPP	470 PF 1.25KV
⚠C446	BZ110205	E02LU5220M	CE	22 UF 50V
⚠C448	BZ110204	E0ELFD220M	CE	22 UF 250V
⚠C501	BZ110025	P2122B224M	CMP	0.22 UF 275V ECQUL
C502	BZ110278	CS0RB0216K	CC	1 UF 16V B
C503	AE001005	E02LT8100M	CE	10 UF 100V
C504	AE000229	CS0RB0413K	CC	0.001 UF 50V B
⚠C505	AE000338	E52DHH820M	CE	82 UF 400V
C506	BZ110247	C0JBB0713K	CC	0.001 UF 2KV B
C507	BZ110247	C0JBB0713K	CC	0.001 UF 2KV B
C508	AE000312	CS0RB0414K	CC	0.01 UF 50V B
C509	AE000312	CS0RB0414K	CC	0.01 UF 50V B
C511	BZ110119	E02LF2222M	CE	2200 UF 16V
C515	BZ110207	E02LT2102M	CE	1000 UF 16V
C517	AD301320	C0PLRR7U2K	CC	680 PF 2KV R
C518	AE000467	E02LU54R7M	CE	4.7 UF 50V

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description	
			CAPACITORS		
C522	BZ110096	E50HU2100M	CE	10 UF 16V	
C523	AE000466	E02LU1221M	CE	220 UF 10V	
C524	AE000312	CS0RB0414K	CC	0.01 UF 50V B	
⚠C525	BZ110223	CD39E0M13M	CC	0.001 UF 250V	
⚠C526	BZ110025	P2122B224M	CMP	0.22 UF 275V ECQUL	
C530	AE000311	CS0RB0315K	CC	0.1 UF 25V B	
⚠C531	BZ110055	E5EZF4102M	CE	1000 UF 35V	
⚠C532	BZ110213	C03L0R7K3K	CC	0.0027UF 2KV R	
C533	BZ110143	E02LU0221M	CE	220 UF 6.3V	
C536	AE000343	P232T0473J	CMPL	0.047 UF 50V MMTV	
C537	AE001901	P23200474J	CMP	0.47 UF 50V MMT	or
	AE001902	P232W0474J	CMPL	0.47 UF 50V MMTS	
C539	AD301348	E02LU5100M	CE	10 UF 50V	
⚠C540	BZ110222	CD39E0MH3M	CC	0.0022UF 250V	
C541	BZ110139	E62NFB101M	CE	100 UF 160V	
C543	AE000229	CS0RB0413K	CC	0.001 UF 50V B	
C602	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C603	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C604	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C605	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C606	BZ110243	CQGTB0414K	CC	0.01 UF 50V B	
C607	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C608	BZ110255	CQGTB0415K	CC	0.1 UF 50V B	
C609	AE000311	CS0RB0315K	CC	0.1 UF 25V B	
C610	AE000335	E02LU0101M	CE	100 UF 6.3V	
C611	BZ110217	E50HU53R3M	CE	3.3 UF 50V	
C612	AE000313	CS0RB04E3K	CC	0.0015UF 50V B	
C613	BZ110042	E02LU1471M	CE	470 UF 10V	
C614	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C615	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C616	AE000317	CS0RB04Q3K	CC	0.0047UF 50V B	
C618	BZ110255	CQGTB0415K	CC	0.1 UF 50V B	
C619	AE000311	CS0RB0315K	CC	0.1 UF 25V B	
C620	BZ110255	CQGTB0415K	CC	0.1 UF 50V B	
C622	BZ110255	CQGTB0415K	CC	0.1 UF 50V B	
C623	AE000311	CS0RB0315K	CC	0.1 UF 25V B	
C626	AE000311	CS0RB0315K	CC	0.1 UF 25V B	
C629	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C633	AE000312	CS0RB0414K	CC	0.01 UF 50V B	
C634	BZ110205	E02LU5220M	CE	22 UF 50V	
C635	AD301348	E02LU5100M	CE	10 UF 50V	
C638	BZ110243	CQGTB0414K	CC	0.01 UF 50V B	
C711	AE000466	E02LU1221M	CE	220 UF 10V	
C716	AE000457	CS0RCH412J	CC	100 PF 50V CH	
C719	AE000457	CS0RCH412J	CC	100 PF 50V CH	
C720	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH	
C721	AE000457	CS0RCH412J	CC	100 PF 50V CH	
C722	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH	
C723	BZ110096	E50HU2100M	CE	10 UF 16V	
C726	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH	
C727	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH	
C728	BZ110096	E50HU2100M	CE	10 UF 16V	
C729	AE000312	CS0RB0414K	CC	0.01 UF 50V B	
C730	AE000312	CS0RB0414K	CC	0.01 UF 50V B	
C731	AE000312	CS0RB0414K	CC	0.01 UF 50V B	
C732	AE001134	CS0KF0214Z	CC	0.01 UF 16V F	
C736	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C737	BZ110278	CS0RB0216K	CC	1 UF 16V B	
C743	BZ110096	E50HU2100M	CE	10 UF 16V	
C753	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH	
C754	AE000951	CQGTCH4Q2J	CC	470 PF 50V CH	
C757	AE000336	E02LU1101M	CE	100 UF 10V	
C759	AE000229	CS0RB0413K	CC	0.001 UF 50V B	
C762	AE000229	CS0RB0413K	CC	0.001 UF 50V B	
C802	BZ110247	C0JBB0713K	CC	0.001 UF 2KV B	
C809	AE001132	CQGTCH4K2J	CC	270 PF 50V CH	
C810	AE000460	CS0RCH4K2J	CC	270 PF 50V CH	
C811	AE001132	CQGTCH4K2J	CC	270 PF 50V CH	
C901	BZ110143	E02LU0221M	CE	220 UF 6.3V	
C902	AE000313	CS0RB04E3K	CC	0.0015UF 50V B	
C903	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH	
C904	AE000459	CS0RCH4H2J	CC	220 PF 50V CH	
C905	AE000457	CS0RCH412J	CC	100 PF 50V CH	
C906	AE000457	CS0RCH412J	CC	100 PF 50V CH	
C909	BZ110265	CS0RB04Q2K	CC	470 PF 50V B	
C910	AE000313	CS0RB04E3K	CC	0.0015UF 50V B	
C911	BZ110096	E50HU2100M	CE	10 UF 16V	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		CAPACITORS		
C912	AE000309	CS0RB02L5K	CC	0.33 UF 16V B
C913	AE000321	CS0RCH430C	CC	3 PF 50V CH
C914	AE000321	CS0RCH430C	CC	3 PF 50V CH
C915	AE000309	CS0RB02L5K	CC	0.33 UF 16V B
C916	AE000309	CS0RB02L5K	CC	0.33 UF 16V B
C917	AE000309	CS0RB02L5K	CC	0.33 UF 16V B
C918	AE000325	CS0RCH4Q2J	CC	470 PF 50V CH
C919	AE000313	CS0RB04E3K	CC	0.0015UF 50V B
C920	BZ110096	E50HU2100M	CE	10 UF 16V
C921	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C923	AE001133	CQGTF04Q5Z	CC	0.47 UF 50V F
C924	AE001133	CQGTF04Q5Z	CC	0.47 UF 50V F
C929	AE000309	CS0RB02L5K	CC	0.33 UF 16V B
C930	BZ110263	E50HU2220M	CE	22 UF 16 V
C931	BZ110263	E50HU2220M	CE	22 UF 16 V
C932	BZ110263	E50HU2220M	CE	22 UF 16 V
C933	BZ110263	E50HU2220M	CE	22 UF 16 V
C936	BZ110096	E50HU2100M	CE	10 UF 16V
C937	BZ110096	E50HU2100M	CE	10 UF 16V
C938	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C939	BZ110217	E50HU53R3M	CE	3.3 UF 50V
C941	AE000311	CS0RB0315K	CC	0.1 UF 25V B
C942	BZ110096	E50HU2100M	CE	10 UF 16V
C944	AE000501	CS0RCH4S1J	CC	56 PF 50V CH
C945	AE000501	CS0RCH4S1J	CC	56 PF 50V CH
C946	AE000501	CS0RCH4S1J	CC	56 PF 50V CH
C1001	BZ110074	E50HU5010M	CE	1 UF 50V
C1002	BZ110074	E50HU5010M	CE	1 UF 50V
C1004	BZ110205	E02LU5220M	CE	22 UF 50V
C1008	AE000471	E5EZU5100M	CE	10 UF 50V
C1009	BZ110053	E02LF3102M	CE	1000 UF 25V
C1010	AE000317	CS0RB04Q3K	CC	0.0047UF 50V B
C1012	AE000317	CS0RB04Q3K	CC	0.0047UF 50V B
C1013	AD301434	E02LU4101M	CE	100 UF 35V
C1014	AD300066	E02LF4222M	CE	2200 UF 35V
C1015	BZ110078	E02L03102M	CE	1000 UF 25V
		DIODES		
D001	BZ410037	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D101	BZ410054	0021721150	LED	SLR-342VCT32
D102	BZ410020	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D103	AD301537	0021E5Q210	LED	LTL-1CHGE-002A
D108	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D301	AE000331	DD1R0MA770	DIODE,SILICON	MA77
D401	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D402	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D403	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D404	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D405	BZ410063	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
D406	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D407	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D408	AD300732	D28XQS04N0	DIODE,SCHOTTKY	11EQS04N-TA2B5
⚠D410	BZ410063	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D501	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D502	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D503	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D504	BZ410062	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
D505	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D506	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D507	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D508	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D509	BZ410020	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D511	BZ410122	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D512	BZ410077	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D513	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D514	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D515	BZ410077	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D516	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D517	BZ410092	D2WXN49370	DIODE,SILICON	1N4937
D519	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D520	BZ410111	D28F30DF60	DIODE,RECTIFIER	30DF6-FC
D521	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D525	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D526	AD301980	D2CF2016L0	DIODE,SILICON	FE201-6L49
D527	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D528	BZ410100	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D530	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D531	BZ410094	D97U01501B	DIODE,ZENER	MTZJ15B T-77

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		DIODES		
D532	BZ410092	D2WXN49370	DIODE SILICON	1N4937
D533	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D602	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D603	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D604	BZ410043	D2WT011E10	DIODE SILICON	11E1-EIC
D605	BZ410066	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D609	BZ410077	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D611	BZ410023	D97U09R11B	DIODE,ZENER	MTZJ9.1B T-77
D712	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D723	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D801	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D802	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D803	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D804	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D805	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D806	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D1001	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
		ICS		
IC101	AE001701	I5PD0F013B	IC	OECF013B
IC102	AD301641	I9UF032310	IC	PST3231NR
IC199	AE002300	A3M506Y015	IC	S-24C16AFJA-TB-01
IC201	AE001625	I0WDE2248E	IC	STV2248E
⚠IC401	BZ611081	I0WTD81740	IC	TDA8174A
IC502	BZ611089	I1KA98R09A	IC	KIA78R09API
IC503	AE000475	I1KA98R060	IC	KIA278R06PI
⚠IC506	BZ410088	0002E00610	PHOTO COUPLER	LTV-817M-VB
IC702	AD301988	I0UF015010	IC	MM1501XNRE
IC902	AE000815	I19FF34100	IC	MSP3410G-QA-B8
IC1002	AD300056	I0FSP52760	IC	AN5276
		TRANSISTORS		
Q102	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q103	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q201	BZ510114	T8AA03881S	TRANSISTOR,SILICON	KTC3881S-RTK
Q204	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q301	BZ510114	T8AA03881S	TRANSISTOR,SILICON	KTC3881S-RTK
Q302	BZ510114	T8AA03881S	TRANSISTOR,SILICON	KTC3881S-RTK
Q303	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q304	BZ510021	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q401	BZ510040	TDUU024990	TRANSISTOR,SILICON	2SD2499(LB0EC1)
Q402	BZ510089	TC5T01627Y	TRANSISTOR,SILICON	2SC1627_Y(TPE2)
Q403	BZ510020	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
⚠Q501	BZ510115	T41F026510	TRANSISTOR FIELD EFF	ECT 2SK2651-01MR
⚠Q502	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q503	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q505	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q507	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q508	BZ510022	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146
Q509	BZ510004	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
Q510	BZ510021	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q511	BZ510057	TAAT01281Y	TRANSISTOR,SILICON	KTA1281_Y
Q512	BZ510025	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
Q513	BZ510005	TA3T1371A0	TRANSISTOR,SILICON	2SA1371(D,E)-AE
Q514	BZ510011	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA
Q601	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q609	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q701	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q702	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q703	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q704	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S
Q801	BZ510100	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
Q802	BZ510100	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
Q803	BZ510100	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
⚠Q804	BZ510091	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q805	BZ510091	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q806	BZ510091	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
Q1002	BZ510026	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
		COILS &TRANSFORMERS		
L001	BZ310141	02167F100J	COIL	10 UH
L101	BZ310141	02167F100J	COIL	10 UH
L102	BZ310141	02167F100J	COIL	10 UH
L202	BZ310148	033700005R	COIL,VIDEO IFT	3700005
L203	BZ310077	021LA61R0M	COIL	1 UH
L204	BZ310052	021LA6100K	COIL	10 UH
L206	BZ310049	021LA6R22M	COIL	0.22 UH
L207	AD301445	021LA6100J	COIL	10 UH
L208	AE000290	02167F3R3J	COIL	3.3 UH
L302	BZ310049	021LA6R22M	COIL	0.22 UH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
		COILS &TRANSFORMERS		
L401	BZ310004	021679472K	COIL	4.7 MH
L403	AE000020	022800033A	COIL,LINEARITY	20416A
⚠L501	AE000078	029T000091	COIL,LINE FILTER	0R8A393F28Y
L502	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
⚠L503	BZ310195	028R200015	COIL,DEGAUSS	8R200015
L601	BZ310141	02167F100J	COIL	10 UH
L701	BZ310183	021LA6220J	COIL	22 UH
L702	BZ310183	021LA6220J	COIL	22 UH
L703	BZ310183	021LA6220J	COIL	22 UH
L705	BZ310183	021LA6220J	COIL	22 UH
L706	BZ310183	021LA6220J	COIL	22 UH
L707	BZ310183	021LA6220J	COIL	22 UH
L708	BZ310183	021LA6220J	COIL	22 UH
L709	BZ310183	021LA6220J	COIL	22 UH
L710	BZ310183	021LA6220J	COIL	22 UH
L711	BZ310183	021LA6220J	COIL	22 UH
L713	BZ310052	021LA6100K	COIL	10 UH
L715	AD301445	021LA6100J	COIL	10 UH
L716	AD301445	021LA6100J	COIL	10 UH
L904	BZ310141	02167F100J	COIL	10 UH
L905	BZ310141	02167F100J	COIL	10 UH
T401	BZ310157	045009003J	TRANS,HORIZONTAL DRIVE	ETH09K14BZ
⚠T501	AE000989	0481350864	TRANSFORMER,SWITCHING	81350864
		JACKS		
J701	AE000775	063G100041	SOCKET,21PIN	035_0_8083_00
J702	BZ614361	060J131015	HEADPHONE JACK	MSJ-2000
J703	AD300110	060G401047	RCA JACK	HTJ-032-03AY
J704	AD300111	060G401046	RCA JACK	HTJ-032-03AW
J705	AD300112	060G401039	RCA JACK	HTJ-032-03AR
⚠J801	AD301356	066F130020	SOCKET,CATHODE RAY,TUBE	ISHS53S
		SWITCHES		
SW102	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW104	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW106	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW107	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
⚠SW501	AE000574	0530105019	SWITCH	ESB92S22B
		VARIABLE RESISTORS		
VR401	BZ210218	V1K63H3BTE	VOLUME,SEMI FIXED	NVG6TLTAB222
VR420	AE000038	V1K62Q2BT8	VOLUME,SEMI FIXED	NVG6THTB471
VR501	BZ210128	V1163H3BTC	VOLUME,SEMI FIXED	EVNCYAA03BE3
		P.C.BOARD ASSEMBLIES		
PCB010	AE002301	A3M506Y010K	PCB ASS'Y	TMC572B
PCB110	AE002302	A3M506Y110K	PCB ASS'Y	TCC433B
		MISCELLANEOUS		
B501	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B504	BZ310129	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B701	BZ310129	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B702	BZ310129	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
BT001	AE002361	1412004013	BATTERY,MANGAN	R03(AB)2PXGPI
BT002	AE002361	1412004013	BATTERY,MANGAN	R03(AB)2PXGPI
⚠CD501	AE000448	1206655823	CORD,AC BUSH	1206655823
CD801	AE000449	1278210014	BRAIDED WIRE	SM1642-001
CD802	AE001015	WDL6042038	FLAT,CABLE	AWM2468 AWG26 6C BLACK 420MM
CD803	AE002362	WBL6034038	FLAT,CABLE	AWM2468 AWG26 4C BLACK 340MM
CF201	BZ614302	1012T5R507	FILTER,CERAMIC TRAP	TPWA02B-TF21
CF202	AE001619	102E238R9E	FILTER,SAW	J1981M
CF204	AE000296	1012T03101	FILTER,CERAMIC TRAP	MKT31.9MA110P-TF
CF301	AE001618	102E238R94	FILTER,SAW	K9650M
CF304	AE000297	1012T04001	FILTER,CERAMIC TRAP	MKT40.4MA110P-TF
CP001	BZ614016	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP101	BZ614330	069X160379	CONNECTOR PCB SIDE	06JQ-ST
CP401	BZ614303	069S450089	CONNECTOR PCB SIDE	A1561WV2-A5P
CP501	BZ614176	069S320419	CONNECTOR PCB SIDE	A3963WV2-3PD
CP502	BZ614283	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP801	BZ614269	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP1001	AD301045	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP802A	BZ614333	067U006049	WIRE HOLDER	B2013H02-6P
CP802B	BZ614333	067U006049	WIRE HOLDER	B2013H02-6P
CP803A	BZ614334	067U004029	WIRE HOLDER	B2013H02-4P
CP803B	BZ614334	067U004029	WIRE HOLDER	B2013H02-4P
EL001	BZ614043	124116281A	EYE LET	XRY16X28BD
EL002	BZ614044	124120301A	EYE LET	XRY20X30BD
⚠F501	BZ614486	080NT04004	FUSE	50T040H
⚠FB401	AD302299	043221012F	TRANSFORMER,FLYBACK	FQI-21B002
FH501	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
ICP501	AE000446	0845T07003	IC PROTECTOR	20P_7000

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
			MISCELLANEOUS	
ICP502	AE000445	0845T03003	IC PROTECTOR	20P_3000
OS101	AD301048	0773071001	REMOTE RECEIVER	RPM7138-H5
RY501	BZ612009	0560V20115	RELAY	ALKS321
SP351	AE001127	070C555007	SPEAKER	SG05B01BWA
⚠TH501	AE000464	D8E080A100	DEGAUSS ELEMENT	B59209-J80-A10
TM101	AE001128	076N0GX020	TRANSMITTER	RC-GX020
TU001	AE001365	0145517007	TUNER,VHF-UHF	TUWRF4EG-778F2A
⚠V801	AE000991	098Y210434	CRT W/DY	A51LMV10X16N45
X101	AE001617	100CT4R013	CRYSTAL	HC-49/U-S
X601	BZ613024	100CT4R408	CRYSTAL	HC-49/U
X602	BZ613025	100CT3R509	CRYSTAL	HC-49/U
X901	BZ613042	100CT01803	CRYSTAL	HC-49/U-S

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

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